Cameco

July 21, 2014

CAMECO RESOURCES

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ATTN: Document Control Desk

Mr. Drew Persinko, Deputy Director
Decommissioning and Uranium Recovery Licensing Directorate
Division of Waste Management and Environmental Protection
Office of Federal and State Materials and Environmental Management Programs
Mailstop T8 F5
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

RE: NRC License SUA-1548, Docket No. 40-8956 Smith Ranch Highland Uranium Project 2014-2015 Financial Assurance Estimates

Dear Mr. Persinko:

Pursuant to License Condition 9.5 of Source Material License SUA-1548, Power Resources, Inc. d/b/a Cameco Resources (Cameco) is herein submitting the 2014-15 Surety Estimate Updates for the Smith Ranch/Reynolds Ranch and Highland Uranium Projects. These estimates result in proposed surety amounts of $123,108,800 and $90,316,700 for the Smith Ranch/Reynolds Ranch and Highland.

If you have questions or need additional please feel free to contact me directly at (307) 333-7665.

Sincerely,

Larry McGonagle

Att: Smith Ranch Uranium Project, 2014-15 Surety Estimate Update
Highland Uranium Project, 2014-15 Surety Estimate Update
1 disc

cc: Doug Mandeville, USNRC w/Att
File SR 4.6.4.1 w/Att
File HUP 4.6.4.1 w/Att

Cameco Resources
Smith Ranch/Reynolds Ranch and Highland Combined Operations
2014-2015 Surety Estimate

Total Restoration and Reclamation Cost Estimate			
I.	Groundwater Restoration (GWR-WF and GWR-SITE Sheets)		$127,290,606
II.	Well & Drill Hole Abandonment (WA Sheet)		$28,984,114
III.	Wellfield Buildings & Equipment Removal & Disposal (WF BLDGS Sheet)		$10,167,732
IV.	Wellfield and Satellite Surface Relclamation (WF REC Sheet)		$1,553,658
V.	Equipment Removal & Disposal (EQUIP Sheet)		$1,914,511
VI.	Building Removal & Disposal (BLDGS Sheet)		$7,373,410
VII.	Miscellaneous Reclamation (MISC REC Sheet)		$8,303,364
	Subtotal Restoration and Reclamation Cost Estimate		$185,587,395
	Contractor Profit & Overhead (10%)[1]	See Master Costs	
	Contingency (15%)[2]	15%	$27,838,109
		TOTAL[3]	$213,425,500

[1], Per WDEQ/LQD Guideline No. 12, Section 12(b)

[2], Per WDEQ/LQD Guideline No. 12, Section 12(a) and (c-h), Section 13 and NRC License Condition 9.5 (SUA-1548)

[3], Costs reflect both WDEQ & NRC requirements. No salvage value assumed.

Cameco Resources
Smith Ranch/Reynolds Ranch Operations
2014-2015 Surety Estimate

Total Restoration and Reclamation Cost Estimate			
I.	Groundwater Restoration (GWR-WF and GWR-SITE Sheets)		$75,165,079
II.	Well & Drill Hole Abandonment (WA Sheet)		$19,565,678
III.	Wellfield Buildings & Equipment Removal & Disposal (WF BLDGS Sheet)		$4,951,771
IV.	Wellfield and Satellite Surface Relclamation (WF REC Sheet)		$1,013,053
V.	Equipment Removal & Disposal (EQUIP Sheet)		$1,161,531
VI.	Building Removal & Disposal (BLDGS Sheet)		$4,183,853
VII.	Miscellaneous Reclamation (MISC REC Sheet)		$1,010,184
	Subtotal Restoration and Reclamation Cost Estimate		$107,051,148
	Contractor Profit & Overhead (10%)[1]	See Master Costs	
	Contingency (15%)[2]	15%	$16,057,672
	TOTAL[3]		$123,108,800

[1], Per WDEQ/LQD Guideline No. 12, Section 12(b)

[2], Per WDEQ/LQD Guideline No. 12, Section 12(a) and (c-h), Section 13 and NRC License Condition 9.5 (SUA-1548)

[3], Costs reflect both WDEQ & NRC requirements. No salvage value assumed.

Cameco Resources
Smith Ranch Uranium Project
2013-14 Surety Estimate Update

Ground Water Restoration - Wellfield	Mine Unit 1	Mine Unit 2	Mine Unit 3/Ext	Mine Unit 4/4A	Mine Unit 15	Mine Unit 15A	Mine Unit K	K-North	Mine Unit 9	Mine Unit 10	Mine Unit 10-Ext	Mine Unit 27	Mine Unit 21	Mine Unit 7
I. Ground Water Sweep Costs														
Estimated PV's	0	1	1	0.6	1	1	1	1	1	1	1	1	0	1
Total kgals for GWS	0	110,785	152,825	71,530	137,426	52,669	84,209	78,562	136,376	190,435	99,498	54,232	0	104,736
Bleed to Deep Disposal Well (%)	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Groundwater Sweep Unit Cost ($/kgal)	$2.04	$2.04	$2.04	$2.04	$2.04	$2.04	$2.04	$2.04	$2.04	$2.04	$2.04	$2.04	$2.04	$2.04
Subtotal Ground Water Sweep Costs per Wellfield	$0.00	$226,554.74	$312,526.31	$146,277.65	$281,035.44	$107,707.83	$172,206.96	$160,658.87	$278,888.20	$389,438.56	$203,472.88	$110,904.15	$0.00	$214,184.56
Total Ground Water Sweep Costs	**$2,603,856**													
II. Reverse Osmosis Costs														
Estimated PV's	0	4.5	4.5	3.3	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	0	4.5
Total Kgals for RO	0	498,533	687,713	393,413	618,417	237,011	378,941	353,529	613,692	856,958	447,741	244,044	0	471,312
Wellfield Pumping Cost	$0.20	$0.20	$0.20	$0.20	$0.20	$0.20	$0.20	$0.20	$0.20	$0.20	$0.20	$0.20	$0.20	$0.20
Reverse Osmosis Unit Cost ($/kgal)	$0.62	$0.62	$0.62	$0.62	$0.62	$0.62	$0.62	$0.62	$0.62	$0.62	$0.62	$0.62	$0.62	$0.62
Bleed to Deep Disposal Well (%)	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%
Brine Volume for Disposal	0	99,707	137,543	78,683	123,683	47,402	75,788	70,706	122,738	171,392	89,548	48,809	0	94,262
DDW Disposal Cost($/kgal)	$1.13	$1.13	$1.13	$1.13	$1.13	$1.13	$1.13	$1.13	$1.13	$1.13	$1.13	$1.13	$1.13	$1.13
Permeate Volume for Re-Use	0	398,826	550,170	314,730	494,734	189,608	303,152	282,823	490,954	685,566	358,193	195,235	0	377,050
Satellite Pumping Cost	$0.72	$0.72	$0.72	$0.72	$0.72	$0.72	$0.72	$0.72	$0.72	$0.72	$0.72	$0.72	$0.72	$0.72
Subtotal Reverse Osmosis & Disposal Costs per Wellfield	$0.00	$805,140.40	$1,110,670.05	$635,369.89	$998,756.37	$382,776.91	$611,996.82	$570,956.72	$991,125.40	$1,384,004.26	$723,111.07	$394,136.16	$0.00	$761,178.72
Total Reverse Osmosis Costs	**$9,369,223**													
III. Reverse Osmosis with Chemical Reductant Costs														
Estimated PV's	0.5	3.5	3.5	3.3	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	0.0	3.5
Total kgals for RO	31,419	387,748	534,888	393,413	480,991	184,342	294,732	274,967	477,316	666,523	348,243	189,812	0	366,576
Wellfield Pumping Cost	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Reverse Osmosis with Chemical Reductant Unit Cost ($/kgal)	$0.71	$0.71	$0.71	$0.71	$0.71	$0.71	$0.71	$0.71	$0.71	$0.71	$0.71	$0.71	$0.71	$0.71
Bleed to Deep Disposal Well (%)	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%
Brine Volume for Disposal (kgal)	6,284	77,550	106,978	78,683	96,198	36,868	58,946	54,993	95,463	133,305	69,649	37,962	0	73,315
DDW Disposal Cost($/kgal)	$1.13	$1.13	$1.13	$1.13	$1.13	$1.13	$1.13	$1.13	$1.13	$1.13	$1.13	$1.13	$1.13	$1.13
Permeate Volume for Re-Use	$25,135	$310,198	$427,910	$314,730	$384,793	$147,473	$235,785	$219,974	$381,853	$533,218	$278,594	$151,850	$0	$293,261
Satellite Pumping Cost ($/kgal)	$0.72	$0.72	$0.72	$0.72	$0.72	$0.72	$0.72	$0.72	$0.72	$0.72	$0.72	$0.72	$0.72	$0.72
Subtotal RO with Chemical Reductant per Wellfield	$53,689.85	$662,606.54	$914,048.33	$672,287.75	$821,946.71	$315,013.98	$503,655.13	$469,880.35	$815,666.64	$1,138,994.23	$595,098.84	$324,362.30	$0.00	$626,427.39
Total Reverse Osmosis Costs	**$7,913,678**													
IV. Mechanical Integrity Testing (MIT) Costs														
Pre-Restoration, Restoration and Stability Period (yrs)	1	7	10	6	13	14	22	22	19	20	19	12	0	15
Number of Injection Wells	160	233	280	371	835	0	280	175	398	380	200	380	0	250
Number of MITs required per Well	0.2	1.4	2.0	1.2	2.6	2.8	4.4	4.4	3.8	4.0	3.8	2.4	0.0	3.0
MIT Cost per Injection Well	$130.60	$130.60	$130.60	$130.60	$130.60	$130.60	$130.60	$130.60	$130.60	$130.60	$130.60	$130.60	$130.60	$130.60
Subtotal MIT Mine Unit	$4,179.14	$42,601.07	$73,134.88	$58,142.23	$283,528.26	$0.00	$160,896.74	$100,560.46	$197,516.42	$198,508.96	$99,254.48	$119,105.38	$0.00	$97,948.50
Total MIT Costs	**$1,435,376**													
V. Wellfield Refurbishment Costs														
Well Replacement (#)	0	10	50	10	50	0	0	0	0	0	0	0	0	0
Replacement ($/well)	$14,763	$14,763	$14,763	$14,763	$14,763	$14,763	$14,763	$14,763	$14,763	$14,763	$14,763	$14,763	$14,763	$14,763
Bellhole Refurbishment (#)	0	7	11	14	0	0	0	0	0	0	0	0	0	0
Refurbishment ($/bellhole)	$5,530	$5,530	$5,530	$5,530	$5,530	$5,530	$5,530	$5,530	$5,530	$5,530	$5,530	$5,530	$5,530	$5,530
Header House Refurbishment (#)	0	5	5	5	12	0	0	0	0	0	0	0	0	0
Refurbishment ($/header house)	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000
Subtotal Refurbishment Cost per Wellfield	$0	$236,340	$848,980	$275,050	$858,150	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Wellfield Refurbishment Cost	**$2,218,520**													
VI. Monitoring and Sampling Costs														
A. Pre-Restoration Monitoring														
1. Excursion Monitoring (M, MO and MU wells, twice per month)														
# of Wells	49	50	40	90	83	42	51	53	69	59	35	85	0	49
Total # samples	0	0	3840	0	5976	9072	12240	13992	18216	18408	12600	8160	0	10584
UCL Parameters ($/sample)	$30.00	$30.00	$30.00	$30.00	$30.00	$30.00	$30.00	$30.00	$30.00	$30.00	$30.00	$30.00	$30.00	$30.00
Subtotal Pre-Restoration Monitoring Costs per Mine Unit	$0.00	$0.00	$115,200.00	$0.00	$179,280.00	$272,160.00	$367,200.00	$419,760.00	$546,480.00	$552,240.00	$378,000.00	$244,800.00	$0.00	$317,520.00
Total Pre-Restoration Monitoring Costs	$3,392,640													
B. Restoration Monitoring														
1. Sampling Prior to Start-up (MP Wells)														
# of Wells	19	13	24	12	22	10	13	11	14	20	9	15	0	18

Cameco Resources
Smith Ranch Uranium Project
2013-14 Surety Estimate Update

Ground Water Restoration -Wellfield	Mine Unit 1	Mine Unit 2	Mine Unit 3/Ext	Mine Unit 4/4A	Mine Unit 15	Mine Unit 15A	Mine Unit K	K-North	Mine Unit 9	Mine Unit 10	Mine Unit 10-Ext	Mine Unit 27	Mine Unit 21	Mine Unit 7
Modified Guideline 8 ($/sample)	$249.00	$249.00	$249.00	$249.00	$249.00	$249.00	$249.00	$249.00	$249.00	$249.00	$249.00	$249.00	$249.00	$249.00
2. Restoration Progress Monitoring (MP Wells, every 2 months)														
# of Wells	19	13	24	12	22	10	13	11	14	20	9	15	0	18
Total # samples	0	468	720	360	1188	240	858	660	588	720	162	630	0	540
Restoration Progress Parameters ($/sample)	$50.00	$50.00	$50.00	$50.00	$50.00	$50.00	$50.00	$50.00	$50.00	$50.00	$50.00	$50.00	$50.00	$50.00
3. Excursion Monitoring (M, MO and MU wells, every 2 months)														
# of Wells	49	50	40	90	83	42	51	53	69	59	35	85	0	49
Total # samples	0	1800	1200	2700	4482	1008	3366	3180	2898	2124	630	3570	0	1470
UCL Parameters ($/sample)	$30.00	$30.00	$30.00	$30.00	$30.00	$30.00	$30.00	$30.00	$30.00	$30.00	$30.00	$30.00	$30.00	$30.00
Subtotal Restoration Monitoring Costs per Mine Unit	$4,731.00	$80,637.00	$77,976.00	$101,988.00	$199,338.00	$44,730.00	$147,117.00	$131,139.00	$119,826.00	$104,700.00	$29,241.00	$142,335.00	$0.00	$75,582.00
Total Restoration Monitoring Costs	$1,259,340.00													
C. Stability Monitoring														
1. Beginning of stability (MP wells)														
# of Wells	19	13	24	12	22	10	13	11	14	20	9	15	0	18
Modified Guideline 8 ($/sample)	$249.00	$249.00	$249.00	$249.00	$249.00	$249.00	$249.00	$249.00	$249.00	$249.00	$249.00	$249.00	$249.00	$249.00
2. Quarterly sampling (MP wells)														
# of Wells	19	13	24	12	22	10	13	11	14	20	9	15	0	18
Total # samples	76	52	96	48	88	40	52	44	56	80	36	60	0	72
Modified Guideline 8 ($/sample)	$249.00	$249.00	$249.00	$249.00	$249.00	$249.00	$249.00	$249.00	$249.00	$249.00	$249.00	$249.00	$249.00	$249.00
3. Monitor Well Sampling (M wells, every 2 months)														
# of Wells	25	24	24	57	39	18	28	28	43	49	20	40	0	20
Total # samples	150	144	144	342	234	108	168	168	258	294	120	240	0	120
UCL Parameters ($/sample)	$30.00	$30.00	$30.00	$30.00	$30.00	$30.00	$30.00	$30.00	$30.00	$30.00	$30.00	$30.00	$30.00	$30.00
Subtotal Stability Monitoring Costs per Mine Unit	$28,155.00	$20,505.00	$34,200.00	$25,200.00	$34,410.00	$15,690.00	$21,225.00	$18,735.00	$25,170.00	$33,720.00	$14,805.00	$25,875.00	$0.00	$26,010.00
Total Stability Monitoring Costs	$323,700.00													
D. Other Laboratory Costs														
Radon Sampling	$13,200.00	$92,400.00	$132,000.00	$79,200.00	$171,600.00	$184,800.00	$290,400.00	$290,400.00	$250,800.00	$264,000.00	$250,800.00	$158,400.00	$0.00	$198,000.00
Subtotal Monitoring and Sampling Costs per Mine Unit	$46,086.00	$193,542.00	$359,376.00	$206,388.00	$584,628.00	$517,380.00	$825,942.00	$860,034.00	$942,276.00	$954,660.00	$672,846.00	$571,410.00	$0.00	$617,112.00
Total Monitoring and Sampling Costs	**$7,351,680**													
VII. Header House Heating Costs														
Number of Header Houses per Unit(s)	6	5	10	11	18	5	9	7	13	9	5	4	0	7
Pre-Restoration and Restoration Period (yrs)	0	6	9	5	12	13	21	21	18	19	18	11	0	14
Electrical Heating Costs ($/yr)	$1,050	$1,050	$1,050	$1,050	$1,050	$1,050	$1,050	$1,050	$1,050	$1,050	$1,050	$1,050	$1,050	$1,050
Subtotal Header House Heating Cost per Wellfield	$0	$31,493	$94,478	$57,737	$226,748	$68,234	$198,405	$154,315	$245,644	$179,509	$94,478	$46,189	$0	$102,876
Total Header House Heating Costs	**$1,500,107**													
TOTAL RESTORATION COST PER WELLFIELD	$103,955	$2,198,278	$3,713,214	$2,051,252	$4,054,793	$1,391,113	$2,473,102	$2,316,405	$3,471,116	$4,245,115	$2,388,262	$1,566,107	$0	$2,419,728
TOTAL WELLFIELD RESTORATION COSTS	**$32,392,441**													

Cameco Resources
Smith Ranch Uranium Project
2013-14 Surety Estimate Update

Ground Water Restoration - Site Wide										
I.	**Building Utility Costs**	**CPP**	**Main Office**	**Maint Shop**	**Pumphouse**	**Sat SR-1**	**Sat SR-2**	**Sat Reynolds**		
	Electricity Unit Cost ($/yr)	$30,384	$25,564	$5,749	$10,078	$41,255	$41,255	$41,255		
	Propane ($/yr)	$0	$0	$0	$0	$0	$47,203	$47,203		
	Natural Gas ($/yr)	$33,817	$0	$0	$0	$4,180	$0	$0		
	Number of Years	21	21	21	21	16	21	6		
	Subtotal Utility Cost per Building	$1,348,219	$536,851	$120,730	$211,638	$726,955	$1,857,610	$530,746		
	*Yrs for Satellite SR-1 assumes end of restoration for MU-7									
	*Yrs for Satellite Reynolds assumes end of restoration for MU-27									
	Total Building Utility Costs	**$5,332,749**								
II.	**Deep Disposal Well Utility Costs**	**SR-1**	**SR-2**	**REY-1**	**REY-2**	**REY-3**	**SRHUP #6**	**SRHUP #7**	**SRHUP #8**	**SRHUP #10**
	Electricity Unit Cost ($/yr)	$4,587	$4,587	$4,587	$4,587	$4,587	$4,587	$4,587	$4,587	$4,587
	Propane ($/yr)	$0	$0	$0	$0	$0	$0	$0	$0	$0
	Natural Gas ($/yr)	$0	$0	$0	$0	$0	$0	$0	$0	$0
	Number of Years	21	21	21	0	0	21	21	0	21
	Subtotal Utility Cost per Building	$96,322	$96,322	$96,322	$0	$0	$96,322	$96,322	$0	$96,322
	Total Deep Disposal Well Utility Costs	**$577,933**								
III.	**Booster Pump Operation Costs**									
	Restoration Period (yrs)	21								
	Booster Pump Operating Cost ($/yr)	$169,386.16								
	Total Booster Pump Operating Cost	**$3,557,109**								
IV.	**Infrastructure, Equipment Maintenance,**									
	Replacement and Repair Costs									
	Annual Maintenance Cost	$92,320		*Based on planned expenditures (2013)						
	Restoration Period (yrs)	21								
	Total Cost	**$1,938,720**								
V.	**Deep Disposal Well MIT Costs**									
	Five-year MIT Costs for Disposal Wells	$31,625.00								
	Number of DDWs	9								
	Number of MITs per DDW	3								
	Total DDW MIT Cost	**$853,875**								
VI.	**Capital Costs**									
	*Estimates based on planned expenditures (2013)									
	Deep Disposal Well SRHUP #8	$3,400,000								
	RO Installation (Satellite SR-2)	$600,000								
	RO Installation (Reynolds Satellite)	$600,000								
	Satellite SR-2 to Mine Unit 15 Pipeline	$266,376								
	SR-HUP Connecting Pipeline	$209,872								
	Total Capital Costs	**$5,076,248**								

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VII	**Vehicle Operation Costs**									
	Number of Pickup Trucks (Gas)	10								
	Truck Cost ($/hr)	$22.14								
	Average Operating Time (hrs/yr)	1000								
	Restoration and Stability Period (yrs)	22								
	Total Vehicle Operation Cost	**$4,871,460**								
VII	**Labor Costs**									
	Assumptions:									
	Number of Environmental Managers/RSOs	0.5		*Management positions split between Smith Ranch and Highland						
	$/hr	$64.40								
	Number of Restoration Managers	0.5		*Management positions split between Smith Ranch and Highland						
	$/hr	$56.00								
	Number of Environmental Techs/HPTs	2								
	$/hr	$35.00								
	Number of Operators/Laborers	7								
	$/hr	$36.40								
	Number of Maintenance Technicians	2								
	$/hr	$32.20								
	Hrs/yr	2080								
	Restoration and Stability Period (yrs)	22								
	Total Labor Cost	**$20,564,544**								
TOTAL SITE-WIDE RESTORATION COSTS		**$42,772,638**								

Cameco Resources
Smith Ranch Uranium Project
2013-14 Surety Estimate Update

Well and Drill Hole Abandonment	Mine Unit 1	Mine Unit 2	Mine Unit 3/Ext	Mine Unit 4/4A	Mine Unit 15	Mine Unit 15A	Mine Unit K	K-North	Mine Unit 9	Mine Unit 10	Mine Unit 10-Ext	Mine Unit 27	Mine Unit 21	Mine Unit 7	Other
I. Well Abandonment (Wellfields)															
A. Sealing Costs						Inc in MU-15									
Total # of Wells per Wellfield	305	429	580	700	1387	42	502	328	734	640	335	658	0	436	21
Production, Injection and Perimeter Well Average Depth (ft)	500	850	750	850	450	500	950	864	950	900	900	800	600	825	950
Well Abandonment (Sealing) Costs ($/ft)	$2.75	$2.75	$2.75	$2.75	$2.75	$2.75	$2.75	$2.75	$2.75	$2.75	$2.75	$2.75	$2.75	$2.75	$2.75
Subtotal Sealing Costs per Wellfield	$419,375	$1,002,788	$1,196,250	$1,636,250	$1,716,413	$57,750	$1,311,475	$779,328	$1,917,575	$1,584,000	$829,125	$1,447,600	$0	$989,175	$54,863
B Casing Removal and Diposal Costs															
Total # of Wells per Wellfield (In Service)	305	429	580	700	1387	42	502	328	734	640	335	658	0	436	21
# of Previously Abandoned Wells Pending Release	124	100	70	88	121	0	128	11	89	4	0	19	0	0	0
Total # of Wells for Casing Removal and Disposal	429	529	650	788	1508	42	630	339	823	644	335	677	0	436	21
Remove and Dispose Casing ($/well)	$33	$33	$33	$33	$33	$33	$33	$33	$33	$33	$33	$33	$33	$33	$33
Subtotal Casing Removal and Diposal Costs per Wellfield	$14,157	$17,457	$21,450	$26,004	$49,764	$1,386	$20,790	$11,187	$27,159	$21,252	$11,055	$22,341	$0	$14,388	$693
Subtotal Well Abandonment Costs per Wellfield	$433,532	$1,020,245	$1,217,700	$1,662,254	$1,766,177	$59,136	$1,332,265	$790,515	$1,944,734	$1,605,252	$840,180	$1,469,941	$0	$1,003,563	$55,556
Total Well Abandonment Costs	**$15,201,049**														
II. Removal of Contaminated Soil Around Wells															
# of Production and Injection Wells	255	377	537	610	1301	0	451	274	658	590	300	570	0	385	
Removal of Contaminated Soil Around Wells ($/well)	$85.46	$85.46	$85.46	$85.46	$85.46	$85.46	$85.46	$85.46	$85.46	$85.46	$85.46	$85.46	$85.46	$85.46	
Subtotal Contaminated Soil Removal/Disposal Costs per Wellfield	$21,791	$32,217	$45,890	$52,129	$111,179	$0	$38,541	$23,415	$56,231	$50,420	$25,637	$48,710	$0	$32,901	
Total Contaminated Soil Removal/Disposal Costs	**$539,062**														
III. Delineation Hole Abandonment															
A. Drill Hole Plug and Abandonment															
# of Drill Holes Pending Bond Release															
2007-08	56														
2008-09	55														
2009-10	638														
2010-11	821														
2011-12	0														
2012-13	594														
2013-14	591														
Total # of Drill Holes	2755														
# of Projected Drill Holes															
2014-15	900														
Total # of Drill Holes	3655														
% of 2755 Drill Holes Requiring Bentonite Top 100 ft	20%														
Total Footage Requiring Abandonment (ft)	55,100														
Hole Abandonment ($/ft)	$3.30														
Subtotal Plug and Abandonment Costs	$181,830														
Projected Drill Hole Abandonment; ave depth 800ft	$2,376,000														
B. Incidental Costs															
Total # of Drill Holes	3655														
Site Location ($/hole)	$11														
Capping ($/hole)	$11														
Small Site Grading and Seeding ($/site)	$55														
Subtotal Incidental Costs	$281,435														
Total Delineation Hole Abandonment	**$2,839,265**														

IV. Waste Disposal Well Abandonment	SR-1	SR-2	SRHUP #6	SRHUP #7	SRHUP #8	SRHUP #10	REY-1	REY-2	REY-3
A. Well Sealing									
Total Depth of Well	10,097	9,996	9,600	9,900	9,700	9,550	9,950	0	0
Sealing Cost Per Foot	$13.62	$13.62	$13.62	$13.62	$13.62	$13.62	$13.62	$13.62	$13.62
*Sealing costs per foot includes surface reclamation costs									
Subtotal Plugging Costs per Well	$137,521	$136,146	$130,752	$134,838	$132,114	$130,071	$135,519	$0	$0
B. Pump Dismantling and Decontamination									
Number of Pumps	2	2	2	2	2	2	2	0	0
Pump Dismantling and Disposal Cost	$2,788	$2,788	$2,788	$2,788	$2,788	$2,788	$2,788	$2,788	$2,788
Subtotal Dismantling and Decon Costs per Well	$5,576.06	$5,576.06	$5,576.06	$5,576.06	$5,576.06	$5,576.06	$5,576.06	$0.00	$0.00
C. Tubing String Disposal (NRC-Licensed Facility)									
Length of Tubing String (ft)	8,271	8,257	8,910	9,100	8,910	8,800	8,217	0	0
Diameter of Tubing String (inches)	2.875	2.875	2.875	2.875	2.875	2.875	2.875	0	0
Volume of Tubing String (ft^3)	193	192	207	212	207	205	191	0	0
Transportation and Disposal Unit Cost ($/ft3)	$7.32	$7.32	$7.32	$7.32	$7.32	$7.32	$7.32	$7.32	$7.32
Subtotal Tubing String Disposal Costs per Well	$1,410	$1,408	$1,519	$1,552	$1,519	$1,501	$1,401	$0	$0
Total Waste Disposal Well Abandonment Costs	**$986,303**								
TOTAL WELL AND DRILL HOLE ABANDONMENT COSTS	**$19,565,678**								

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Wellfield Buildings and Equipment Removal and Disposal	Mine Unit 1	Mine Unit 2	Mine Unit 3/Ext	Mine Unit 4/4A	Mine Unit 15	Mine Unit 15A	Mine Unit K	K-North	Mine Unit 9	Mine Unit 10	Mine Unit 10-Ext	Mine Unit 27	Mine Unit 21	Mine Unit 7
I. Wellfield Piping														
Number of Header Houses per Wellfield	6	5	10	11	18	5	9	7	13	9	5	4	0	7
Length of Piping per Header House (ft)	13800	13800	13800	13800	13800	13800	13800	13800	13800	13800	13800	13800	13800	13800
*Based on 46 wells per header house with 300 ft pipeline per well														
Approximate Total Length of Piping (ft)	82800	69000	138000	151800	248400	69000	124200	96600	179400	124200	69000	55200	0	96600
A. Removal and Loading														
Wellfield Piping Removal Unit Cost ($/ft of pipe)	$1.86	$1.86	$1.86	$1.86	$1.86	$1.86	$1.86	$1.86	$1.86	$1.86	$1.86	$1.86	$1.86	$1.86
Subtotal Wellfield Piping Removal and Loading Costs	$153,731	$128,109	$256,218	$281,840	$461,192	$128,109	$230,596	$179,352	$333,083	$230,596	$128,109	$102,487	$0	$179,352
B. Transport and Disposal Costs (NRC-Licensed Facility)														
Average Diameter of Piping (inches)	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Chipped Volume Reduction (ft3/ft)	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
Chipped Volume per Wellfield (ft^3)	888	740	1480	1628	2663	740	1332	1036	1923	1332	740	592	0	1036
Volume for Disposal Assuming 10% Void Space (ft^3)	977	814	1628	1790	2930	814	1465	1139	2116	1465	814	651	0	1139
Transportation and Disposal Unit Cost ($/ft3)	$5.77	$5.77	$5.77	$5.77	$5.77	$5.77	$5.77	$5.77	$5.77	$5.77	$5.77	$5.77	$5.77	$5.77
Subtotal Wellfield Piping Transport and Disposal Costs	$5,637	$4,697	$9,393	$10,328	$16,905	$4,697	$8,453	$6,572	$12,209	$8,453	$4,697	$3,756	$0	$6,572
Subtotal Wellfield Piping Costs per Wellfield	$159,368	$132,806	$265,611	$292,168	$478,097	$132,806	$239,049	$185,924	$345,292	$239,049	$132,806	$106,243	$0	$185,924
Total Wellfield Piping Costs	**$2,895,143**													
II. Well Pumps and Tubing														
*Pump and tubing removal costs included under ground water restoration labor														
*60% of production/injection wells contain pumps and/or tubing														
A. Pump and Tubing Transportation and Disposal						Inc in MU-15								
Number of Production Wells	95	139	232	234	441	0	171	99	260	210	100	190	0	135
Number of Injection Wells	160	238	305	376	860	0	280	175	398	380	200	380	0	250
Number of Monitor Wells	49	50	40	90	83	42	51	53	69	49	35	85	0	49
1. Pump Volume														
Number of Production Wells with Pumps	57	83	139	140	265	0	103	59	156	126	60	114	0	81
Pump Volume (ft3)	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43
Pump Volume per Wellfield (ft^3)	24.7	36.0	60.2	60.6	114.8	0.0	44.6	25.6	67.6	54.6	26.0	49.4	0.0	35.1
2. Tubing Volume														
Average Tubing Length per Well (ft)	475	825	725	825	425	475	925	839	925	875	875	775	575	800
*Based on average well depth minus 25 ft														
Tubing Length per Wellfield (ft)	144,400	352,275	418,325	577,500	588,200	19,950	464,350	274,353	672,475	559,125	293,125	507,625	0	347,200
Diameter of Production Well Fiberglass Tubing (inches)	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Diameter of Injection Well HDPE Tubing (inches)	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25
Chipped Volume Reduction (ft3/ft)	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
Chipped Volume per Wellfield (ft^3)	1548	3777	4485	6192	6306	214	4978	2941	7210	5995	3143	5442	0	3722
Volume of Pump and Tubing (ft^3)	1573	3813	4545	6253	6421	214	5023	2967	7278	6050	3169	5491	0	3757
Volume for Disposal Assuming Void Space (ft^3)	1730	4194	5000	6878	7063	235	5525	3263	8005	6655	3486	6041	0	4133
Transportation and Disposal Unit Cost ($/ft3)	$5.77	$5.77	$5.77	$5.77	$5.77	$5.77	$5.77	$5.77	$5.77	$5.77	$5.77	$5.77	$5.77	$5.77
Subtotal Pump and Tubing Transport and Disposal Costs Per Wellfield	$9,982	$24,198	$28,849	$39,684	$40,752	$1,356	$31,878	$18,827	$46,187	$38,398	$20,113	$34,855	$0	$23,846
Total Pump and Tubing Disposal Costs	**$358,925**													
III. Buried Trunkline (Includes $ for fiber optic cable removal)														
Assumptions:														
Length of Trunkline Trench (ft)	5075	7600	4790	12565	19085	7500	12000	17198	11565	9050	5000	20000	0	5400
A. Removal and Loading														
Main Pipeline Removal Unit Cost ($/ft of trench)	$3.71	$3.71	$3.71	$3.71	$3.71	$3.71	$3.71	$3.71	$3.71	$3.71	$3.71	$3.71	$3.71	$3.71
Subtotal Trunkline Removal and Loading Costs	$18,845	$28,221	$17,787	$46,658	$70,868	$27,850	$44,560	$63,861	$42,944	$33,605	$18,567	$74,266	$0	$20,052
B. Transport and Disposal Costs (NRC-Licensed Facility)														
1. 3" HDPE Trunkline														
Piping Length (ft)	5075	7600	4790	12565	0	0	0	0	0	0	0	0	0	0
Chipped Volume per foot of pipe (ft3/ft)	0.0233	0.0233	0.0233	0.0233	0.0233	0.0233	0.0233	0.0233	0.0233	0.0233	0.0233	0.0233	0.0233	0.0233
Chipped Volume (ft^3)	118	177	112	293	0	0	0	0	0	0	0	0	0	0
2. 6" HDPE Trunkline														
Piping Length (ft)	2410	10000	4820	7320	28170	2320	2288	3466	4800	6850	3500	6500	0	0
Chipped Volume per foot of pipe (ft3/ft)	0.0834	0.0834	0.0834	0.0834	0.0834	0.0834	0.0834	0.0834	0.0834	0.0834	0.0834	0.0834	0.0834	0.0834
Chipped Volume (ft^3)	201	834	402	610	2349	193	191	289	400	571	292	542	0	0
3. 8" HDPE Trunkline														
Piping Length (ft)	4100	0	1100	4240	4000	6266	1104	948	15980	5000	2500	0	0	4000
Chipped Volume per foot of pipe (ft3/ft)	0.1413	0.1413	0.1413	0.1413	0.1413	0.1413	0.1413	0.1413	0.1413	0.1413	0.1413	0.1413	0.1413	0.1413
Chipped Volume (ft^3)	579	0	155	599	565	885	156	134	2258	707	353	0	0	565
4. 10" HDPE Trunkline														
Piping Length (ft)	0	5200	3660	4680	6000	1400	0	1028	2800	2000	1000	800	0	2000
Chipped Volume per foot of pipe (ft3/ft)	0.2196	0.2196	0.2196	0.2196	0.2196	0.2196	0.2196	0.2196	0.2196	0.2196	0.2196	0.2196	0.2196	0.2196
Chipped Volume (ft^3)	0	1142	804	1028	1317	307	0	226	615	439	220	176	0	439

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5. 12" HDPE Trunkline														
Piping Length (ft)	1460	0	0	5270	0	1080	0	2866	4110	0	0	2000	0	0
Chipped Volume per foot of pipe (ft3/ft)	0.3088	0.3088	0.3088	0.3088	0.3088	0.3088	0.3088	0.3088	0.3088	0.3088	0.3088	0.3088	0.3088	0.3088
Chipped Volume (ft^3)	451	0	0	1627	0	333	0	885	1269	0	0	618	0	0
6. 14" HDPE Trunkline														
Piping Length (ft)	740	0	0	0	0	6200	0	0	1830	0	0	0	0	4000
Chipped Volume per foot of pipe (ft3/ft)	0.3723	0.3723	0.3723	0.3723	0.3723	0.3723	0.3723	0.3723	0.3723	0.3723	0.3723	0.3723	0.3723	0.3723
Chipped Volume (ft^3)	276	0	0	0	0	2308	0	0	681	0	0	0	0	1489
7. 16" HDPE Trunkline														
Piping Length (ft)	1440	0	0	3620	0	0	2010	2210	1420	0	0	0	0	0
Chipped Volume per foot of pipe (ft3/ft)	0.4864	0.4864	0.4864	0.4864	0.4864	0.4864	0.4864	0.4864	0.4864	0.4864	0.4864	0.4864	0.4864	0.4864
Chipped Volume (ft^3)	700	0	0	1761	0	0	978	1075	691	0	0	0	0	0
8 18" HDPE Trunkline														
Piping Length (ft)	0	0	0	0	24170	0	2086	18600	7640	6550	3100	9091	0	0
Chipped Volume per foot of pipe (ft3/ft)	0.6155	0.6155	0.6155	0.6155	0.6155	0.6155	0.6155	0.6155	0.6155	0.6155	0.6155	0.6155	0.6155	0.6155
Chipped Volume (ft^3)	0	0	0	0	14877	0	1284	11448	4702	4032	1908	5596	0	0
Total Chipped Volume (ft^3)	2325	2153	1472	5918	19108	4028	2608	14057	10617	5748	2773	6931	0	2494
Volume for Disposal Assuming Void Space (ft^3)	2558	2368	1620	6509	21019	4431	2869	15463	11678	6323	3050	7624	0	2743
Transportation and Disposal Unit Cost ($/ft3)	$5.77	$5.77	$5.77	$5.77	$5.77	$5.77	$5.77	$5.77	$5.77	$5.77	$5.77	$5.77	$5.77	$5.77
Subtotal Trunkline Transport and Disposal Costs	$14,759	$13,663	$9,347	$37,555	$121,275	$25,566	$16,553	$89,218	$67,379	$36,482	$17,598	$43,989	$0	$15,826
Trunkline Decommissioning Costs per Wellfield	$33,604	$41,884	$27,134	$84,213	$192,143	$53,416	$61,113	$153,079	$110,323	$70,087	$36,165	$118,255	$0	$35,878
Total Trunkline Decommissioning Costs	**$1,017,294**													
IV. Wellhead Cover Removal														
Number of Wells	305	429	580	700	1387	42	502	328	734	640	335	658	0	436
Well Head Removal, Decontamination, and Disposal Cost	$11.74	$11.74	$11.74	$11.74	$11.74	$11.74	$11.74	$11.74	$11.74	$11.74	$11.74	$11.74	$11.74	$11.74
Subtotal Wellhead Removal Costs	$3,580	$5,036	$6,809	$8,217	$16,282	$493	$5,893	$3,850	$8,617	$7,513	$3,933	$7,724	$0	$5,118
Total Well Head Removal and Disposal Costs	**$83,065**													
V. Header Houses (Includes Booster Stations)														
Booster Houses	0	0	1	1	6	0	3	0	1	0	0	0	0	0
Total Quantity	6	5	11	12	24	5	12	7	14	9	5	4	0	7
Average Header House Volume (ft^3)	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
A. Removal														
Total Volume (ft^3)	9600	8000	17600	19200	38400	8000	19200	11200	22400	14400	8000	6400	0	11200
Demolition Cost	$0.316	$0.316	$0.316	$0.316	$0.316	$0.316	$0.316	$0.316	$0.316	$0.316	$0.316	$0.316	$0.316	$0.316
Subtotal Building Demolition Costs	$3,031	$2,526	$5,556	$6,061	$12,123	$2,526	$6,061	$3,536	$7,072	$4,546	$2,526	$2,020	$0	$3,536
B. Survey and Decontamination														
Cost per Header House	$621	$621	$621	$621	$621	$621	$621	$621	$621	$621	$621	$621	$621	$621
Subtotal Survey and Decontamination Costs	$3,728	$3,107	$6,835	$7,457	$14,913	$3,107	$7,457	$4,350	$8,699	$5,592	$3,107	$2,486	$0	$4,350
C. Disposal														
Total Volume for Disposal - Incl. 33% Factor (cy)	117	98	215	235	469	98	235	137	274	176	98	78	0	137
Volume for Disposal Assuming Void Space (cy)	129	108	237	258	516	108	258	151	301	194	108	86	0	151
Disposal Cost, Landfill (cy)	$42.17	$42.17	$42.17	$42.17	$42.17	$42.17	$42.17	$42.17	$42.17	$42.17	$42.17	$42.17	$42.17	$42.17
Subtotal Off-Site County Landfill Disposal Costs	$5,440	$4,554	$9,994	$10,879	$21,758	$4,554	$10,879	$6,367	$12,692	$8,180	$4,554	$3,626	$0	$6,367
Headerhouse Soil Removal Volume (assumes 10'Wx20'Lx2.5'D)	500	500	500	500	500	500	500	500	500	500	500	500	500	500
11e.(2) Disposal Cost (ft3)	$5.80	$5.80	$5.80	$5.80	$5.80	$5.80	$5.80	$5.80	$5.80	$5.80	$5.80	$5.80	$5.80	$5.80
Subtotal 11e.(2) Disposal Costs	$17,414	$14,512	$31,926	$34,829	$69,658	$14,512	$34,829	$20,317	$40,634	$26,122	$14,512	$11,610	$0	$20,317
Subtotal Header House Removal and Disposal Costs per Wellfield	$29,613	$24,699	$54,311	$59,226	$118,452	$24,699	$59,226	$34,570	$69,097	$44,440	$24,699	$19,742	$0	$34,570
Total Header House Removal and Disposal Costs	**$597,344**													
TOTAL REMOVAL AND DISPOSAL COSTS PER WELLFIELD	$236,147	$228,623	$382,714	$483,508	$845,726	$212,770	$397,159	$396,250	$579,516	$399,487	$217,716	$286,819	$0	$285,336
TOTAL WELLFIELD BUILDINGS AND EQUIPMENT REMOVAL	**$4,951,771**													

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Wellfield and Satellite Surface Reclamation	Mine Unit 1	Mine Unit 2	Mine Unit 3/Ext	Mine Unit 4/4A	Mine Unit 15	Mine Unit 15A	Mine Unit K	K-North	Mine Unit 9	Mine Unit 10	Mine Unit 10-Ext	Mine Unit 27	Mine Unit 21	Mine Unit 7
I. Wellfield Pattern Area, and Road Reclamation														
Area (acres)	50.9	104.3	99.8	125.1	117.3	44.5	83.3	65.4	88.7	99.5	52.0	29.5	0.0	68.4
*Assume wellfield pattern area X 2														
Discing/Seeding Unit Cost ($/acre)	$548	$548	$548	$548	$548	$548	$548	$548	$548	$548	$548	$548	$548	$548
Subtotal Pattern Area and Road Reclamation Costs	$27,865	$57,111	$54,679	$68,524	$64,231	$24,393	$45,610	$35,828	$48,567	$54,504	$28,479	$16,134	$0	$37,471
Total Wellfield Area Reclamation Costs	**$563,396**													
II. Wellfield Road Reclamation														
Road Construction														
Length of Wellfield Roads (1000 ft)	6.2	10.1	11.2	92.4	19.8	13.6	9.6	2.8	12.7	16.2	8	16.2	0	16.2
Wellfield Road Reclamation Unit Cost ($/1000 ft)	$1,438	$1,438	$1,438	$1,438	$1,438	$1,438	$1,438	$1,438	$1,438	$1,438	$1,438	$1,438	$1,438	$1,438
Subtotal Wellfield Road Reclamation Costs	$8,913	$14,520	$16,101	$132,836	$28,465	$19,552	$13,801	$4,025	$18,258	$23,290	$11,501	$23,290	$0	$23,290
Total Wellfield Road Reclamation Costs	**$256,471**													
III. Laydown area reclamation														
Area of Disturbance (acres)	1	1	2	2	1	1	2	2	1	1	1	1	1	1
Average Depth of Stripped Topsoil (ft)	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67
Surface Grade: Level Ground														
Average Length of Topsoil Haul (ft)	500	500	500	500	500	500	500	500	500	500	500	500	500	500
A. Ripping Overburden with Dozer														
Ripping Cost (per acre)	$1,381	$1,381	$1,381	$1,381	$1,381	$1,381	$1,381	$1,381	$1,381	$1,381	$1,381	$1,381	$1,381	$1,381
Subtotal Ripping Costs	$1,381	$1,381	$2,763	$2,763	$1,381	$1,381	$2,072	$2,072	$1,381	$1,381	$1,381	$1,381	$1,381	$1,381
B. Topsoil Application with Scraper														
Volume of Topsoil Removed (cy)	1,081	1,081	2,162	2,162	1,081	1,081	1,621	1,621	1,081	1,081	1,081	1,081	1,081	1,081
Moving Materials (0% Grade)	$1.21	$1.21	$1.21	$1.21	$1.21	$1.21	$1.21	$1.21	$1.21	$1.21	$1.21	$1.21	$1.21	$1.21
Subtotal Topsoil Application Costs	$1,307	$1,307	$2,613	$2,613	$1,307	$1,307	$1,960	$1,960	$1,307	$1,307	$1,307	$1,307	$1,307	$1,307
C. Discing and Seeding														
Discing/Seeding Unit Cost ($/acre)	$548	$548	$548	$548	$548	$548	$548	$548	$548	$548	$548	$548	$548	$548
Subtotal Discing/Seeding Costs	$548	$548	$1,095	$1,095	$548	$548	$822	$822	$548	$548	$548	$548	$548	$548
Subtotal Surface Reclamation Costs per WF laydown area	$3,236	$3,236	$6,471	$6,471	$3,236	$3,236	$4,854	$4,854	$3,236	$3,236	$3,236	$3,236	$3,236	$3,236
Total Wellfield Laydown Area Reclamation Costs	$55,010													
SUBTOTAL SURFACE RECLAMATION COSTS PER WELLFIELD	**$40,014**	**$74,867**	**$77,251**	**$207,831**	**$95,932**	**$47,181**	**$64,265**	**$44,707**	**$70,061**	**$81,030**	**$43,216**	**$42,660**	**$3,236**	**$63,997**
TOTAL WELLFIELD SURFACE RECLAMATION COSTS	**$874,877**													
IV. Fence Removal														
Length of Fencing (ft)	16,487	11,580	7,388	25,047	7,074	0	23,271	23,271	21,887	21,595	10,000	19,732	0	8,674
Fence Removal Costs	$0.43	$0.43	$0.43	$0.43	$0.43	$0.43	$0.43	$0.43	$0.43	$0.43	$0.43	$0.43	$0.43	$0.43
Subtotal Fence Removal Costs per Wellfield	$7,073	$4,968	$3,169	$10,745	$3,035	$0	$9,983	$9,983	$9,390	$9,264	$4,290	$8,465	$0	$3,721
Total Fence Removal Costs	**$84,087**													
V. Satellite Area Reclamation	**SR-1**	**SR-2**	**REY**											
Assumptions:														
Area of Disturbance (acres)	2.70	5.00	5.00											
Average Depth of Stripped Topsoil (ft)	1	1	1											
Surface Grade: Level Ground														
Average Length of Topsoil Haul (ft)	1000	500	500											
A. Ripping Overburden with Dozer														
Ripping Cost (per acre)	$1,381.27	$1,381.27	$1,381.27											
Subtotal Ripping Costs	$3,729	$6,906	$6,906											
B. Topsoil Application with Scraper														
Volume of Topsoil Removed (cy)	4356	8067	8067											
Moving Materials (0% Grade)	$1.44	$1.44	$1.44											
Subtotal Topsoil Application Costs	$6,291	$11,651	$11,651											
C. Discing and Seeding														
Discing/Seeding Unit Cost ($/acre)	$548	$548	$548											
Subtotal Discing/Seeding Costs	$1,479	$2,738	$2,738											
Subtotal Surface Reclamation Costs per Location	$11,499	$21,295	$21,295											
Total Satellite Building Area Reclamation Costs	**$54,089**													
TOTAL WELLFIELD AND SATELLITE SURFACE RECLMAATION COSTS	**$1,013,053**													

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Equipment Removal and Loading	CPP IX Plant	Central Plant	Dryer Building	Satellite SR-1	Pilot ISL	Pumphouse	Bone Yard	Satellite SR-2	Satellite Reynolds
I. Removal and Loading Costs									
A. Tankage									
Number of Tanks	23	36	2	21	15	3	3	10	10
Volume of Tank Construction Material (ft^3)	900	1340	300	840	260	164	164	397	397
Tank Removal Cost	$144.12	$144.12	$144.12	$144.12	$144.12	$144.12	$144.12	$144.12	$144.12
Subtotal Tankage Removal and Loading Costs	$129,709	$193,122	$43,236	$121,061	$37,471	$23,636	$23,636	$57,144	$57,216
B. PVC/Steel Pipe									
PVC Pipe Footage	4800	6000	350	7000	1500	0	0	4000	4000
Average PVC Pipe Diameter (inches)	3	3	2	3	3	3	0	3	3
Shredded PVC Pipe Volume Reduction (ft3/ft)	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023
Volume of Shredded PVC Pipe (ft^3)	112	140	8	163	35	0	0	93	93
Steel Pipe Footage	1100	1,000	300	250	0	80	0	0	0
Average Steel Pipe Diameter (inches)	6	0	0	6	0	8	0	0	0
Volume (ft^3)	216	0	0	49	0	30	0	0	0
Pipe Removal Cost	$8.93	$8.93	$8.93	$8.93	$8.93	$8.93	$8.93	$8.93	$8.93
Subtotal PVC/Steel Pipe Removal and Loading Costs	$52,682	$62,504	$5,804	$64,737	$13,394	$714	$0	$35,717	$35,717
C. Pumps									
Number of Pumps	23	67	6	23	12	2	0	13	13
Average Volume (ft^3/pump)	4.93	4.93	0	4.93	4.93	4.93	4.93	4.93	4.93
Volume of Pumps (ft^3)	113	330	0	113	59	10	0	64	64
Pump Removal Cost	$108	$108	$108	$108	$108	$108	$108	$108	$108
Subtotal Pump Removal and Loading Costs	$12,219.37	$35,684.88	$0.00	$12,219.37	$6,380.02	$1,081.36	$0.00	$6,920.70	$6,920.70
D. Dryer									
Dryer Volume (ft^3)	0	0	1,000	0	0	0	0	0	0
Dryer Removal Costs	$14.71	$14.71	$14.71	$14.71	$14.71	$14.71	$14.71	$14.71	$14.71
Subtotal Dryer Dismantling and Loading Cost	$0	$0	$14,709	$0	$0	$0	$0	$0	$0
E. RO Units									
Number of RO Units (500 gpm)									
Current	1	0	0	1	0	0	0	0.25	0
Planned	0	0	0	0	0	0	0	1	1
Number of Degasser Units									
Current	0	0	0	1	0	0	0	0	0
Planned	1	0	0	0	0	0	0	1	1
RO/Degasser Average Volume (ft3/Unit)	250	250	250	250	250	250	250	250	250
RO and Degasser Removal Cost	$5.02	$5.02	$5.02	$5.02	$5.02	$5.02	$5.02	$5.02	$5.02
Subtotal RO Unit Removal and Loading Costs	$2,512.43	$0.00	$0.00	$2,512.43	$0.00	$0.00	$0.00	$2,826.49	$2,512.43
Subtotal Equipment Removal and Loading Costs per Facility	$197,122	$291,311	$63,749	$200,530	$57,245	$25,431	$23,636	$102,608	$102,366
Total Equipment Removal and Loading Costs	**$1,086,468**								
II. Transportation and Disposal Costs (NRC-Licensed Facility)									
A. Tankage									
Volume of Tank Construction Material (ft^3)	900	1340	300	840	260	164	164	397	397
Volume for Disposal Assuming Void Space (ft^3)	990	1474	330	924	286	180	180	436	437
Transportation and Disposal Unit Cost ($/ft3)	$7.32	$7.32	$7.32	$7.32	$7.32	$7.32	$7.32	$7.32	$7.32

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Equipment Removal and Loading	CPP IX Plant	Central Plant	Dryer Building	Satellite SR-1	Pilot ISL	Pumphouse	Bone Yard	Satellite SR-2	Satellite Reynolds
Subtotal Tankage Transportation and Disposal Costs	$7,250	$10,795	$2,417	$6,767	$2,095	$1,318	$1,318	$3,193	$3,200
B. PVC / Steel Pipe									
Volume of Shredded PVC Pipe (ft^3)	111.8	139.7	8.2	163.0	34.9	0.0	0.0	93.1	93.1
Volume for Disposal Assuming Void Space (ft^3)	123	154	9	179	38	0	0	102	102
Volume of Steel Pipe (ft^3)	216	0	0	49.075	0	30	0	0	0
Volume for Disposal Assuming Void Space (ft^3)	238	0	0	54	0	33	0	0	0
Transportation and Disposal Unit Cost ($/ft3)	$5.77	$5.77	$5.77	$5.77	$5.77	$5.77	$5.77	$5.77	$5.77
Subtotal PVC Pipe Transportation and Disposal Costs	$2,083	$889	$52	$1,033	$219	$190	$0	$589	$589
C. Pumps									
Volume of Pumps (ft^3)	113	330	0	113	59	10	0	64	64
Volume for Disposal Assuming Void Space (ft^3)	124	363	0	124	65	11	0	70	70
Transportation and Disposal Unit Cost ($/ft3)	$7.32	$7.32	$7.32	$7.32	$7.32	$7.32	$7.32	$7.32	$7.32
Subtotal Pump Transportation and Disposal Costs	$908	$2,658	$0	$908	$476	$81	$0	$513	$513
D. Dryer									
Dryer Volume (ft^3)	0	0	1000	0	0	0	0	0	0
Volume for Disposal Assuming Dryer Remains Intact (ft^3)	0	0	1000	0	0	0	0	0	0
Transportation and Disposal Unit Cost ($/ft3)	$7.32	$7.32	$7.32	$7.32	$7.32	$7.32	$7.32	$7.32	$7.32
Total Dryer Transportation and Disposal Costs	$0	$0	$7,323	$0	$0	$0	$0	$0	$0
E. RO/Degasser Units									
Volume of RO Units (ft^3)	500	0	0	500	0	0	0	562.5	500
Volume for Disposal Assuming Volume Reduction (ft^3)	550	0	0	550	0	0	0	618.75	550
Transportation and Disposal Unit Costs	$7.32	$7.32	$7.32	$7.32	$7.32	$7.32	$7.32	$7.32	$7.32
Subtotal RO Unit Transportation and Disposal Costs	$4,028	$0	$0	$4,028	$0	$0	$0	$4,531	$4,028
Subtotal Equipment Transportation and Disposal Costs per Facility	$14,269	$14,342	$9,792	$12,736	$2,790	$1,589	$1,318	$8,826	$8,330
Total Equipment Transportation and Disposal Costs	**$75,063**								
III. Health and Safety Costs									
Radiation Safety Equipment — Accounted for on GW REST									
Total Health and Safety Costs									
SUBTOTAL EQUIPMENT REMOVAL AND DISPOSAL COSTS PER FACILITY	$211,391	$305,653	$73,541	$213,266	$60,035	$27,020	$24,954	$111,434	$110,696
TOTAL EQUIPMENT REMOVAL AND DISPOSAL COSTS	**$1,161,531**								

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Building Demolition and Disposal	CPP IX Plant 165 x 70	Central Plant 165 x 100	Dryer Building 100 x 35	Office Building	Storage Building	Water Treat Plant	Shop Building	Pilot ISL Building	Fresh Water Pumphouse	CPP O2 Pad	CPP Fuel Area	Mine Unit 15 O2 Pad	DDW 1 Buildings 15x30	DDW SRHUP #10 Buildings 20x24	DDW REY-1 Buildings 20x24	DDW WellHead Buildings 9 ea 8x8	Satellite SR-1 160X120
I. Decontamination Costs																	
A. Wall Decontamination																	
Area to be Decontaminated (ft^2)	9,375	13,150	7,550	0	1,152	576	4,826	12,000	0	0	0	0	720	704	704	0	0
HCl Acid Wash, including labor ($/ft2)	$0.94	$0.94	$0.94	$0.94	$0.94	$0.94	$0.94	$0.94	$0.94	$0.94	$0.94	$0.94	$0.94	$0.94	$0.94	$0.94	$0.94
Subtotal Wall Decontamination Costs	$8,845	$12,407	$7,124	$0	$1,087	$543	$4,553	$11,322	$0	$0	$0	$0	$679	$664	$664	$0	$0
B. Concrete Floor Decontamination																	
Area to be Decontaminated (ft^2)	11,550	16,500	3,500	0	1,678	839	7,028	17,477	0	0	0	0	450	480	392	0	19200
HCl Acid Wash, including labor ($/ft2)	$0.53	$0.53	$0.53	$0.53	$0.53	$0.53	$0.53	$0.53	$0.53	$0.53	$0.53	$0.53	$0.53	$0.53	$0.53	$0.53	$0.53
Subtotal Concrete Floor Decontamination Costs	$6,066	$8,665	$1,838	$0	$881	$441	$3,691	$9,178	$0	$0	$0	$0	$236	$252	$206	$0	$10,083
C. Deep Well Injection Costs																	
Total kgals for Injection (1 gal used per ft2)	20.925	29.65	11.05	0	2.83	1.415	11.854	29.477	0	0	0	0	1.17	1.184	1.096	0	19.2
Deep Well Injection Unit Cost ($/kgals)	$1.13	$1.13	$1.13	$1.13	$1.13	$1.13	$1.13	$1.13	$1.13	$1.13	$1.13	$1.13	$1.13	$1.13	$1.13	$1.13	$1.13
Subtotal Deep Well Injection Costs	$24	$33	$12	$0	$3	$2	$13	$33	$0	$0	$0	$0	$1	$1	$1	$0	$22
Subtotal Decontamination Costs per Building	$14,935	$21,105	$8,974	$0	$1,971	$986	$8,257	$20,533	$0	$0	$0	$0	$916	$917	$871	$0	$10,105
Total Decontamination Costs	**$116,673**																
II. Demolition Costs																	
A. Building																	
Height of Building (ft)	30	35	35	15	10	10	25	18	10	0	0	0	8	10	10	10	24
Volume of Building (ft^3)	346,500	577,500	122,500	120,000	16,780	8,390	175,700	314,586	8,320	0	0	0	3600	4800	3920	5760	460,800
Demolition Cost	$0.32	$0.32	$0.32	$0.32	$0.32	$0.32	$0.32	$0.32	$0.32	$0.32	$0.32	$0.32	$0.32	$0.32	$0.32	$0.32	$0.32
Subtotal Building Demolition Costs	$109,390	$182,317	$38,673	$37,884	$5,297	$2,649	$55,468	$99,315	$2,627	$0	$0	$0	$1,137	$1,515	$1,238	$1,818	$145,475
B. Concrete Floor																	
Area of Concrete Floor (ft^2)	10,550	16,500	3,500	8,000	1,678	839	7,028	17,477	832	400	375	400	450	480	392	448	19,200
Demolition Cost	$6.03	$6.03	$6.03	$6.03	$6.03	$6.03	$6.03	$6.03	$6.03	$6.03	$6.03	$6.03	$6.03	$6.03	$6.03	$6.03	$6.03
Subtotal Concrete Floor Demolition Costs	$63,595	$99,462	$21,098	$48,224	$10,115	$5,057	$42,365	$105,351	$5,015	$2,411	$2,261	$2,411	$2,713	$2,893	$2,363	$2,701	$115,738
C. Concrete Footing																	
Length of Concrete Footing (ft)	411	514	237	358	164	116	335	529	115	80	77	80	85	88	79	85	554
Demolition Cost	$22.23	$22.23	$22.23	$22.23	$22.23	$22.23	$22.23	$22.23	$22.23	$22.23	$22.23	$22.23	$22.23	$22.23	$22.23	$22.23	$22.23
Subtotal Concrete Footing Demolition Costs	$9,134	$11,422	$5,261	$7,954	$3,643	$2,576	$7,455	$11,756	$2,565	$1,778	$1,722	$1,778	$1,886	$1,948	$1,761	$1,882	$12,322
Subtotal Demolition Costs per Building	$182,119	$293,201	$65,032	$94,062	$19,055	$10,282	$105,288	$216,422	$10,207	$4,189	$3,983	$4,189	$5,736	$6,356	$5,362	$6,401	$273,535
Total Demolition Costs	**$2,039,633**																
III. Disposal Costs																	
A. Building																	
Volume of Building (cy)	12833	21389	4537	4444	621	311	6507	11651	308	0	0	0	133	178	145	213	17067
Off-site County Facility																	
Percentage (%)	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Total Volume for Disposal - Incl. 33% Factor (cy)																	
Volume for Disposal (cubic yards)	4235	7058	1497	1467	205	103	2147	3845	102	0	0	0	44	59	48	70	5632
Disposal Unit Cost ($/cy)	$42.17	$42.17	$42.17	$42.17	$42.17	$42.17	$42.17	$42.17	$42.17	$42.17	$42.17	$42.17	$42.17	$42.17	$42.17	$42.17	$42.17
Subtotal county facility off-Site Disposal Costs	$178,576	$297,626	$63,133	$61,844	$8,648	$4,324	$90,551	$162,128	$4,288	$0	$0	$0	$1,855	$2,474	$2,020	$2,969	$237,483
B. Concrete Floor																	
Area of Concrete Floor (ft^2)	10,550	16,500	3,500	8,000	1,678	839	7,028	17,477	832	400	375	400	450	480	392	448	19,200
Average Thickness of Concrete Floor (ft)	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
Volume of Concrete Floor (ft^3)	7912.5	12375	2625	6000	1258.5	629.25	5271	13107.75	624	300	281.25	300	337.5	360	294	336	14400
Volume of Concrete Floor (cy)	293	458	97	222	47	23	195	485	23	11	10	11	13	13	11	12	533
1. Off-site County disposal																	
Percentage (%)	75	75	75	100	100	100	100	75	100	100	100	100	75	75	75	100	75
Volume for Disposal (cy)	220	344	73	222	47	23	195	364	23	11	10	11	9	10	8	12	400
Disposal Unit Cost ($/cy)	$42.17	$42.17	$42.17	$42.17	$42.17	$42.17	$42.17	$42.17	$42.17	$42.17	$42.17	$42.17	$42.17	$42.17	$42.17	$42.17	$42.17
Subtotal county facility off-Site Disposal Costs	$9,268	$14,495	$3,075	$9,370	$1,965	$983	$8,232	$15,353	$975	$469	$439	$469	$395	$422	$344	$525	$16,867
2. NRC-Licensed Facility																	
Percentage (%)	25	25	25	0	0	0	0	25	0	0	0	0	25	25	25	0	25
Volume for Disposal (ft^3)	1978	3094	656	0	0	0	0	3277	0	0	0	0	84	90	74	0	3600
Transportation and Disposal Unit Cost ($/$ft^3$)	$5.80	$5.80	$5.80	$5.80	$5.80	$5.80	$5.80	$5.80	$5.80	$5.80	$5.80	$5.80	$5.80	$5.80	$5.80	$5.80	$5.80
Subtotal NRC-Licensed Facility Disposal Costs	$11,483	$17,959	$3,809	$0	$0	$0	$0	$19,022	$0	$0	$0	$0	$490	$522	$427	$0	$20,897
Subtotal Concrete Floor Disposal Costs	$20,751	$32,454	$6,884	$9,370	$1,965	$983	$8,232	$34,375	$975	$469	$439	$469	$885	$944	$771	$525	$37,764
C. Concrete Footing																	
Length of Concrete Footing (ft)	411	514	237	358	164	116	335	529	115	80	77	80	85	88	79	85	554
Average Depth of Concrete Footing (ft)	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Average Width of Concrete Footing (ft)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Volume of Concrete Footing (ft^3)	1643	2055	947	1431	655	463	1341	2115	462	320	310	320	339	351	317	339	2217
Volume of Concrete Footing (cy)	61	76	35	53	24	17	50	78	17	12	11	12	13	13	12	13	82
Disposal Unit Cost ($/cy)	$42.17	$42.17	$42.17	$42.17	$42.17	$42.17	$42.17	$42.17	$42.17	$42.17	$42.17	$42.17	$42.17	$42.17	$42.17	$42.17	$42.17
Subtotal Concrete Footing Disposal Costs	$2,567	$3,210	$1,478	$2,235	$1,024	$724	$2,095	$3,303	$721	$500	$484	$500	$530	$547	$495	$529	$3,462
Subtotal Disposal Costs per Building	$201,894	$333,290	$71,495	$73,449	$11,637	$6,031	$100,878	$199,806	$5,984	$969	$923	$969	$3,270	$3,965	$3,286	$4,023	$278,709
Total Disposal Costs	**$2,027,547**																

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			CPP IX Plant	Central Plant	Dryer Building	Office Building	Storage Building	Water Treat Plant	Shop Building	Pilot ISL Building	Fresh Water Pumphouse	CPP O2 Pad	CPP Fuel Area	Mine Unit 15 O2 Pad	DDW 1 Buildings	DDW SRHUP #10 Buildings	DDW REY-1 Buildings	DDW WellHead Buildings	Satellite SR-1
Building Demolition and Disposal			165 x 70	165 x 100	100 x 35														
IV. Health and Safety Costs	Accounted for on GW REST														15x30	20x24	20x24	9 ea 8x8	160X120
SUBTOTAL BUILDING DEMOLITION AND DISPOSAL COSTS			$398,948	$647,596	$145,501	$167,511	$32,663	$17,299	$214,423	$436,761	$16,191	$5,158	$4,906	$5,158	$9,922	$11,238	$9,519	$10,424	$562,349
TOTAL BUILDING DEMOLITION AND DISPOSAL COSTS			**$4,183,853**																

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Building Demolition and Disposal	Yellowcake Warehouse 63 x 63	Satellite SR-2 160X120	Satellite Reynolds 160X120	Construction Shop 50X80	CPP Lab Addition 25X40	DDW SRHUP #7 Buildings 20x24	DDW SRHUP #8 Buildings 20x24	CPP Control Room / Change Rooms 32 x 32	CPP Lab 32 x 32	CPP Maintenance Shop Addition 25X40	Sodium Hydroxide Addition 20 x 20	CPP Trailer Bay Addition 90 x 20
I. Decontamination Costs												
A. Wall Decontamination												
Area to be Decontaminated (ft^2)	4662	0	0	0	1000	704	704	0	1024	0	0	4600
HCl Acid Wash, including labor ($/ft2)	$0.94	$0.94	$0.94	$0.94	$0.94	$0.94	$0.94	$0.94	0.94	$0.94	0.94	0.94
Subtotal Wall Decontamination Costs	$4,399	$0	$0	$0	$944	$664	$664	$0	$963	$0	$0	$4,324
B. Concrete Floor Decontamination												
Area to be Decontaminated (ft^2)	3969	19200	0	0	0	480	480	1024	0	1000	800	1800
HCl Acid Wash, including labor ($/ft2)	$0.53	$0.53	$0.53	$0.53	$0.53	$0.53	$0.53	$0.53	$0.53	$0.53	$0.53	$0.53
Subtotal Concrete Floor Decontamination Costs	$2,084	$10,083	$0	$0	$0	$252	$252	$538	$0	$525	$420	$945
C. Deep Well Injection Costs												
Total kgals for Injection (1 gal used per ft2)	8.631	19.2	0	0	1	1.184	1.184	1.024	1.024	1	0.8	6.4
Deep Well Injection Unit Cost ($/kgals)	$1.13	$1.13	$1.13	$1.13	$1.13	$1.13	$1.13	$1.13	$1.13	$1.13	$1.13	$1.13
Subtotal Deep Well Injection Costs	$10	$22	$0	$0	$1	$1	$1	$1	$1	$1	$1	$7
Subtotal Decontamination Costs per Building	$6,493	$10,105	$0	$0	$945	$917	$917	$539	$964	$526	$421	$5,276
Total Decontamination Costs												
II. Demolition Costs												
A. Building												
Height of Building (ft)	20	24	24	20	10	10	10	10	10	10	20	25
Volume of Building (ft^3)	79,380	460,800	460,800	80,000	10,000	4800	4800	10240	10240	10000	16000	45000
Demolition Cost	$0.32	$0.32	$0.32	$0.32	$0.32	$0.32	$0.32	$0.32	0.31	$0.32	0.31	0.31
Subtotal Building Demolition Costs	$25,060	$145,475	$145,475	$25,256	$3,157	$1,515	$1,515	$3,233	$3,174	$3,157	$4,960	$13,950
B. Concrete Floor												
Area of Concrete Floor (ft^2)	3,969	19,200	19,200	4,000	0	480	480	1,000	0	1,000	800	1800
Demolition Cost	$6.03	$6.03	$6.03	$6.03	$6.03	$6.03	$6.03	$6.03	$6.03	$6.03	$6.03	$6.03
Subtotal Concrete Floor Demolition Costs	$23,925	$115,738	$115,738	$24,112	$0	$2,893	$2,893	$6,028	$0	$6,028	$4,822	$10,850
C. Concrete Footing												
Length of Concrete Footing (ft)	252	554	554	253	0	88	88	0	0	63	57	127
Demolition Cost	$22.23	$22.23	$22.23	$22.23	$22.23	$22.23	$22.23	$22.23	$22.23	$22.23	$22.23	$22.23
Subtotal Concrete Footing Demolition Costs	$5,602	$12,322	$12,322	$5,624	$0	$1,948	$1,948	$0	$0	$1,406	$1,258	$2,830
Subtotal Demolition Costs per Building	$54,587	$273,535	$273,535	$54,992	$3,157	$6,356	$6,356	$9,261	$3,174	$10,591	$11,040	$27,630
Total Demolition Costs												
III. Disposal Costs												
A. Building												
Volume of Building (cy)	2940	17067	17067	2963	370	178	178	379	379	370	593	1667
Off-site County Facility												
Percentage (%)	100	100	100	100	100	100	100	100	100	100	100	100
Total Volume for Disposal - Incl. 33% Factor (cy)												
Volume for Disposal (cubic yards)	970	5632	5632	978	122	59	59	125	125	122	196	550
Disposal Unit Cost ($/cy)	$42.17	$42.17	$42.17	$42.17	$42.17	$42.17	$42.17	$42.17	$42.17	$42.17	$42.17	$42.17
Subtotal county facility off-Site Disposal Costs	$40,910	$237,483	$237,483	$41,230	$5,154	$2,474	$2,474	$5,277	$5,277	$5,154	$8,246	$23,192
B. Concrete Floor												
Area of Concrete Floor (ft^2)	3,969	19,200	19,200	4,000	0	480	480	1,000	0	1,000	800	1,800
Average Thickness of Concrete Floor (ft)	0.75	0.75	0.75	0.75	0.75	0.75	0.75	1.75	0.5	0.5	0.75	0.75
Volume of Concrete Floor (ft^3)	2976.75	14400	14400	3000	0	360	360	1750	0	500	600	1350
Volume of Concrete Floor (cy)	110	533	533	111	0	13	13	65	0	19	22	50
1. Off-site County disposal												
Percentage (%)	75	75	75	100	90	75	75	90	75	90	75	75
Volume for Disposal (cy)	83	400	400	111	0	10	10	58	0	17	17	38
Disposal Unit Cost ($/cy)	$42.17	$42.17	$42.17	$42.17	$42.17	$42.17	$42.17	$42.17	$42.17	$42.17	$42.17	$42.17
Subtotal county facility off-Site Disposal Costs	$3,487	$16,867	$16,867	$4,685	$0	$422	$422	$2,460	$0	$703	$703	$1,581
2. NRC-Licensed Facility												
Percentage (%)	25	25	25	0	10	25	25	10	25	10	25	25
Volume for Disposal (ft^3)	744	3600	3600	0	0	90	90	175	0	50	150	338
Transportation and Disposal Unit Cost ($/$ft^3$)	$5.80	$5.80	$5.80	$5.80	$5.80	$5.80	$5.80	$5.80	$5.80	$5.80	$5.80	$5.80
Subtotal NRC-Licensed Facility Disposal Costs	$4,320	$20,897	$20,897	$0	$0	$522	$522	$1,016	$0	$290	$871	$1,959
Subtotal Concrete Floor Disposal Costs	$7,807	$37,764	$37,764	$4,685	$0	$944	$944	$3,476	$0	$993	$1,574	$3,540
C. Concrete Footing												
Length of Concrete Footing (ft)	252	554	554	253	0	88	88	0	0	63	113	127
Average Depth of Concrete Footing (ft)	4	4	4	4	0	4	4	4	0	4	5.75	4
Average Width of Concrete Footing (ft)	1	1	1	1	0	1	1	1	0	1	0.75	1
Volume of Concrete Footing (ft^3)	1008	2217	2217	1012	0	351	351	0	0	253	488	509
Volume of Concrete Footing (cy)	37	82	82	37	0	13	13	0	0	9	18	19
Disposal Unit Cost ($/cy)	$42.17	$42.17	$42.17	$42.17	$42.17	$42.17	$42.17	$42.17	$42.17	$42.17	$42.17	$42.17
Subtotal Concrete Footing Disposal Costs	$1,574	$3,462	$3,462	$1,580	$0	$547	$547	$0	$0	$395	$762	$795
Subtotal Disposal Costs per Building	$50,291	$278,709	$278,709	$47,495	$5,154	$3,965	$3,965	$8,753	$5,277	$6,542	$10,582	$27,527
Total Disposal Costs												

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		Yellowcake Warehouse	Satellite SR-2	Satellite Reynolds	Construction Shop	CPP Lab Addition	DDW SRHUP #7 Buildings	DDW SRHUP #8 Buildings	CPP Control Room / Change Rooms	CPP Lab	CPP Maintenance Shop Addition	Sodium Hydroxide Addition	CPP Trailer Bay Addition
Building Demolition and Disposal		63 x 63	160X120	160X120	50X80	25X40	20x24	20x24	32 x 32	32 x 32	25X40	20 x 20	90 x 20
IV. Health and Safety Costs	Accounted for on GW REST												
SUBTOTAL BUILDING DEMOLITION AND DISPOSAL COSTS		$111,371	$562,349	$552,244	$102,487	$9,256	$11,238	$11,238	$18,553	$9,415	$17,659	$22,043	$60,433
TOTAL BUILDING DEMOLITION AND DISPOSAL COSTS													

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Miscellaneous Reclamation														
I.	**CPP/Office Area/Pilot Plant/Maint. Shop/Chem. Storage/Yard Reclamation**													
		Concrete Pad= 0.3 acres												
		Total Area = 10.57 acres												
	A.	Concrete Pad												
		Area of Concrete Pad (ft^2)	13068											
		Demolition Cost	$6.03											
		Average Thickness of Concrete Floor (ft)	0.50											
		Volume of Concrete Floor (ft^3)	6,534											
		Volume of Concrete Floor (cy)	242											
		Concrete Disposal On Site ($/cy)	$9.12											
		Subtotal Concrete Pad Demolition and Disposal Costs	$80,981											
	B.	Gravel Road Base Removal												
		Average haul distance (ft)	1000											
		Gravel Road Base Area (acres)	8.0											
		Average Road Base Depth (ft)	0.5											
		Volume of Road Base (cy)	6453											
		Moving Materials	$1.44											
		Subtotal Gravel Road Base Removal Costs	$9,321											
	C.	Ripping Overburden with Dozer												
		Overburden Surface Area (acres)	10.6											
		Ripping Cost (per acre)	$1,381.27											
		Subtotal Ripping Overburden Costs	$14,600											
	D.	Topsoil Application												
		Area of surface disturbance (ft^2)	460426											
		Average thickness of topsoil (ft)	0.5											
		Average haul distance (ft)	2000											
		Surface grade (%)												
		Volume of Topsoil (cy)	8,526											
		Moving Materials	$1.44											
		Subtotal Topsoil Application Costs	$12,315											
	E.	Discing/Seeding												
		Surface Area (acres)	10.57											
		Discing/Seeding Unit Cost ($/acre)	$548											
		Subtotal Discing/Seeding Costs	$5,789											
	Total CPP/Office/Yard Area Reclamation		**$123,006**											
II.	**Access Road Reclamation (includes culverts)**		**CPP Access Rd.**	**CPP to SAT 3**	**Access to WF**	**MU-15 Access**	**SR2 Access**	**Reynolds Access**	**Access SRHUP 7**	**Access SRHUP 8**	**Access SRHUP 10 from MU-4**			
	A.	Assumptions												
		Surface grade	1%	5%	5%	0%	5%	0%	0%	0%	0%			
		Length of Road (ft)	5,173	15,827	15,557	10,560	8,500	2,500	1,500	11,250	2,500			
		Width of Road (ft)	40	30	14	30	30	30	20	20	20			
		Area of road (acres)	4.8	10.9	5.0	7.3	5.9	1.7	0.7	5.2	1.1			
	B.	Ripping and Hauling Asphalt												
		Assumptions												
		Average Haul Distance (feet)	500	500	500	500	500	500	500	500	500			
		Average Thickness of Asphalt (ft)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5			
		Ripping Cost (per acre)	$969.29	$969.29	$969.29	$969.29	$969.29	$969.29	$969.29	$969.29	$969.29			
		Volume of Asphalt (cy)	3832	8793	4033	5867	4722	1389	556	4167	926			
		Moving Materials	$1.87	$1.87	$1.87	$1.87	$1.87	$1.87	$1.87	$1.87	$1.87			
		Subtotal Ripping and Hauling Asphalt	$11,774	$27,018	$12,393	$18,026	$14,510	$4,268	$1,707	$12,803	$2,845			
	B.	Gravel Road Base Removal												
		Average haul distance (ft)	1000	1000	1000	1000	1000	1000	1000	1000	1000			
		Gravel Road Base Width (ft)	30	20	10	20	20	20	20	20	20			
		Gravel Road Base Area (acres)	3.56	7.27	3.57	4.85	3.90	1.15	0.69	5.17	1.15			
		Average Road Base Depth (ft)	0.75	0.5	0.5	0.5	0.5	0	0	0	0			
		Volume of Road Base (cy)	4311	5862	2881	3911	3148	0	0	0	0			
		Moving Materials	$1.44	$1.44	$1.44	$1.44	$1.44	$1.44	$1.44	$1.44	$1.44			
		Subtotal Gravel Road Base Removal Costs	$6,226	$8,466	$4,161	$5,649	$4,547	$0	$0	$0	$0			
	C.	Ripping Overburden with Dozer												
		Overburden Surface Area (acres)	4.8	10.9	5.0	7.3	5.9	1.7	0.7	5.2	1.1			
		Ripping Cost (per Acre)	$1,381.27	$1,381.27	$1,381.27	$1,381.27	$1,381.27	$1,381.27	$1,381.27	$1,381.27	$1,381.27			
		Subtotal Ripping Overburden Costs	$6,561	$15,056	$6,906	$10,046	$8,086	$2,378	$951	$7,135	$1,585			
	D.	Topsoil Application												

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Miscellaneous Reclamation												
		Average haul distance (ft)	1500	1500	1500	1500	1500	1500	1500	1500	1500	
		Topsoil Surface Area (ft^2)	206920	474810	217798	316800	255000	75000	30000	225000	50000	
		Depth of Topsoil (ft)	0.3157	0.3157	0.3157	0.3157	0.3157	0.3157	0.3157	0.3157	0.3157	
		Volume of Topsoil (cy)	2419	5552	2547	3704	2982	877	351	2631	585	
		Moving Materials	$1.44	$1.44	$1.44	$1.44	$1.44	$1.44	$1.44	$1.44	$1.44	
		Subtotal Topsoil Application Costs	$3,494	$8,018	$3,678	$5,350	$4,306	$1,267	$507	$3,800	$844	
	E.	Discing/Seeding										
		Surface Area (acres)	4.8	10.9	5.0	7.3	5.9	1.7	0.7	5.2	1.1	
		Discing/Seeding Unit Cost ($/acre)	$548	$548	$548	$548	$548	$548	$548	$548	$548	
		Subtotal Discing/Seeding Costs	$2,602	$5,970	$2,738	$3,983	$3,206	$943	$377	$2,829	$629	
		Multiplier for Projected Additions	0	0	1	0	0	0	0	0	0	
		Subtotal Reclamation Costs per Access Road	$30,657	$64,528	$59,752	$43,054	$34,655	$8,856	$3,542	$26,567	$5,903	
		Total Access Road Reclamation Costs	**$277,514**									
III.	**Trunk Lines**		**Trunk Line #1 (CPP to MU-4)**	**Trunk Line #2 (CPP to SR-1)**	**Trunk Line #3 (MU-15 to SR-1) Included in MU 15 WF REC**	**Trunk Line #4 (O-Sand Pilot)**	**Trunk Line (SR-2 to CPP)**	**WF 4 to CPP - projected**	**Waste Transfer SR2 to MU-15**	**Waste Transfer SR2 to SRHUP 8**	**Waste Transfer SR1 to SRHUP 7**	**SR to HUP DDW Pipeline**
		Length of Trench (ft)	7750	8500	0	5500	2500	10000	12000	10000	7000	9700
	A.	Removal and Loading										
		Main Pipeline Removal Unit Cost ($/ft of trench)	$3.71	$3.71	$3.71	$3.71	$3.71	$3.71	$3.71	$3.71	$3.71	$3.71
		Subtotal Trunkline Removal and Loading Costs	$28,778	$31,563	$0	$20,423	$9,283	$37,133	$44,560	$37,133	$25,993	$36,019
	B.	Transport and Disposal Costs (NRC-Licensed Facility)										
		1 2" HDPE Trunkline										
		Piping Length (ft)	7750	8500	0	22000	0	0	0	0	0	0
		Chipped Volume Reduction (ft3/ft)	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107
		Chipped Volume (ft^3)	83	91	0	236	0	0	0	0	0	0
		1. 4" HDPE Trunkline										
		Piping Length (ft)	0	0	0	0	15000	10000	12000	10000	7000	0
		Chipped Volume Reduction (ft3/ft)	0.0385	0.0385	0.0385	0.0385	0.0385	0.0385	0.0385	0.0385	0.0385	0.0385
		Chipped Volume (ft^3)	0	0	0	0	577	385	462	385	269	0
		2. 6" HDPE Trunkline										
		Piping Length (ft)	7750	17000	0	0	0	0	0	0	0	9700
		Chipped Volume Reduction (ft3/ft)	0.0834	0.0834	0.0834	0.0834	0.0834	0.0834	0.0834	0.0834	0.0834	0.0834
		Chipped Volume (ft^3)	646	1,418	0	0	0	0	0	0	0	809
		3. 12" HDPE Trunkline										
		Piping Length (ft)	0	6000	0	0	0	0	0	0	0	0
		Chipped Volume Reduction (ft3/ft)	0.3088	0.3088	0.3088	0.3088	0.3088	0.3088	0.3088	0.3088	0.3088	0.3088
		Chipped Volume (ft^3)	0	1,853	0	0	0	0	0	0	0	0
		4. 16" HDPE Trunkline										
		Piping Length (ft)	15500	11000	0	15500	15500	0	0	0	0	0
		Chipped Volume Reduction (ft3/ft)	0.4864	0.4864	0.4864	0.4864	0.4864	0.4864	0.4864	0.4864	0.4864	0.4864
		Chipped Volume (ft^3)	7,539	5,350	0	7,539	7,539	0	0	0	0	0
		5. 18" HDPE Trunkline										
		Piping Length (ft)	0	0	0	0	2320	0	0	0	0	0
		Chipped Volume Reduction (ft3/ft)	0.6155	0.6155	0.6155	0.6155	0.6155	0.6155	0.6155	0.6155	0.6155	0.6155
		Chipped Volume (ft^3)	0	0	0	0	1,428	0	0	0	0	0
		Total Volume Chipped (ft^3)	8,268	8,712	0	7,775	9,544	385	462	385	269	809
		Volume for Disposal Assuming Void Space (ft^3)	9,095	9,583	0	8,552	10,498	423	508	423	296	890
		Transportation and Disposal Unit Cost (NRC-Licensed Facility) ($/ft3)	$5.77	$5.77	$5.77	$5.77	$5.77	$5.77	$5.77	$5.77	$5.77	$5.77
		Subtotal Transport and Disposal Costs	$52,476	$55,292	$0	$49,343	$60,571	$2,441	$2,931	$2,441	$1,708	$5,135
	C.	Discing/Seeding										
		Width of Pipeline Trench (ft)	4	4	4	4	4	5	5	5	5	5
		Area of Pipeline Trench (acres)	0.7	0.8	0.0	0.5	0.2	1.1	1.4	1.1	0.8	1.1
		Discing/Seeding Unit Cost ($/acre)	$548	$548	$548	$548	$548	$548	$548	$548	$548	$548
		Subtotal Discing/Seeding Costs	$390	$427	$0	$277	$126	$629	$754	$629	$440	$610
		Subtotal Reclamation Costs per Pipeline	$81,644	$87,282	$0	$70,043	$69,980	$40,203	$48,245	$40,203	$28,141	$41,764
		Total Pipeline Reclamation Costs	**$507,505**									
IV.	**Settling Basin/Storage Ponds Reclamation**		**Storage Ponds**	**Settling Pond**								
	A.	Soil Sampling and Monitoring										
		Number of Soil Samples	15	15								
		$/Sample	$255	$255								
		Subtotal Soil Sampling and Monitoring Costs	$3,825	$3,825								
	B.	Liner/Subsoil Removal and Disposal										

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Miscellaneous Reclamation		
Thickness of clay liner (ft)	1	0.5
Thickness of contaminated subsoil (ft)	1	0.5
Width of Pond (ft)	200	252
Length of Pond (ft)	100	432
Depth of Pond (ft)	10	20
Surface area of pond (ft^2)	20000	108864
1. Removal and Loading		
Volume of Clay Liner (cy)	1481	4032
Clay Liner Removal and Loading Unit Cost ($/cy)	$5.12	$5.12
Subtotal Liner Removal and Loading Costs	$7,580	$20,629
2. Transportation and Disposal		
Volume of Clay Liner (ft^3)	1481	4032
Volume of Geotextile Liner (ft^3)	52	0
Volume of Geotextile Liner @ 40% void (ft^3)	87	0
Transportation and Disposal Unit Cost ($/$ft^3$)	$5.80	$5.80
Subtotal Liner Transportation and Disposal Costs	$9,103	$23,405
Subtotal Liner Removal and Disposal Costs	$16,683	$44,034
C. Grade and Contour		
Volume of Embankment Material (CY)	7,407	80,640
Average Grade (%)	0	0
Distance (ft)	50	100
Material Moving Unit Cost per WDEQ Guideline No.12, App.E ($/cy)	$0.176	$0.297
Subtotal Grade and Contour Costs	$1,304	$23,950
D. Topsoil Application		
Area of surface disturbance (ft^2)	20000	108899
Average thickness of topsoil (ft)	1	1
Average haul distance (ft)	1000	1000
Surface grade (%)	0%	3%
Volume of Topsoil (cy)	741	4,033
Topsoil Unit Cost per WDEQ Guideline No.12, App.C ($/cy)	$1.444	$1.444
Subtotal Topsoil Application Costs	$1,070	$5,825
E. Discing/Seeding		
Area of surface disturbance (acres)	0.5	2.5
Discing/Seeding Unit Cost ($/acre)	$548	$548
Subtotal Discing/Seeding Costs	$274	$1,369
Subtotal Reclamation Costs	$23,156	$79,003
Total Settling Basin/Ponds Reclamation Costs	**$102,159**	
TOTAL MISCELLANEOUS RECLAMATION COSTS	**$1,010,184**	

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	Mine Unit-1	Mine Unit-2	Mine Unit-3/Ext	Mine Unit- 4/4A	Mine Unit-15	Mine Unit-15A	Mine Unit K	Mine Unit K-North	Mine Unit 9	Mine Unit 10	10-Extension	Mine Unit 27	Mine Unit 21	Mine Unit 7
Pore Volume Calculations														
Flare Factor	1.56	1.05	1.16	1.14	1.48	1.68	1.21	1.30	1.52	1.45	1.45	1.82	0	1.74
Wellfield Area (ft2)	1,108,034	2,271,426	2,174,453	2,725,270	2,554,278	970,206	1,813,644	1,424,902	1,931,533	2,167,666	1,132,560	641,495	0	1,490,217
Wellfield Area (acres)	25.44	52.14	49.92	62.56	58.64	22.27	41.64	32.71	44.34	49.76	26.00	14.73	0.00	34.21
Affected Ore Zone Area (ft2)	1,108,034	2,271,426	2,174,453	2,725,270	2,554,278	970,206	1,813,644	1,424,902	1,931,533	2,167,666	1,132,560	641,495	0	1,490,217
Avg. Completed Thickness	18.0	23.0	30.0	19.0	18.0	16.0	19.0	21.0	23.0	30.0	30.0	23.0	0.0	20.0
Porosity	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27
Affected Volume (ft3)	31,113,595	54,854,938	75,670,964	59,029,348	68,045,966	26,079,137	41,695,676	38,899,825	67,526,394	94,293,471	49,266,360	26,852,981	0	51,859,552
Kgallons per Pore Volume	62,837	110,785	152,825	119,216	137,426	52,669	84,209	78,562	136,376	190,435	99,498	54,232	0	104,736
Restoration Schedule (Based on Annual Water Balance/Schedule Update)														
Pre-Restoration Period (yrs)	0	0	4	0	3	9	10	11	11	13	15	4	0	9
Restoration Period (yrs)	0	6	5	5	9	4	11	10	7	6	3	7	0	5
Stability Period (yrs)	1	1	1	1	1	1	1	1	1	1	1	1	0	1
Total # of Years	1	7	10	6	13	14	22	22	19	20	19	12	0	15
End of Restoration (yrs)	21													
End of Stability (yrs)	22													
Number of Header Houses per Wellfield														
Current	6	5	10	11	18	5	9	7	13	9	0	0	0	0
Planned	0	0	0	0	0	0	0	0	0	0	0	4	0	7
Total Estimated	6	5	10	11	18	5	9	7	13	9	0	4	0	7
Average Header House Volume (ft3)	1600													
Number of Wells (In Service) per Wellfield														
Production Wells (P)						Inc in MU-15								
Current	95	134	207	229	416	0	171	99	260	196	0	0	0	27
Planned	0	0	0	0	0	0	0	0	0	14	100	190	0	108
Total Estimated	95	134	207	229	416	0	171	99	260	210	100	190	0	135
Injection Wells (I)														
Current	160	233	280	371	835	0	280	175	398	341	0	0	0	29
Planned	0	0	0	0	0	0	0	0	0	39	200	380	0	221
Total Estimated	160	233	280	371	835	0	280	175	398	380	200	380	0	250
Restoration Wells (R)														
Current	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Planned	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Estimated	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Monitor Wells (M, MO, MU, etc.)														
Current	49	50	40	90	83	42	51	53	69	49	0	85	0	49
Planned	0	0	0	0	0	0	0	0	0	0	35	0	0	0
Total Estimated	49	50	40	90	83	42	51	53	69	49	35	85	0	49
Other Wells (Pumping Wells, etc.)														
Current	1	2	3	0	3	0	0	1	7	1	0	3	0	2
Planned	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Estimated	1	2	3	0	3	0	0	1	7	1	0	3	0	2
Wellfield Refurbishment (I or P)														
Planned	0	10	50	10	50	0	0	0	0	0	0	0	0	0
Number of In Service Wells per Wellfield	305	429	580	700	1387	42	502	328	734	640	335	658	0	436
Total Number of Wells	7,076													
Well Completion Details														
Average Well Depth (ft)	500	850	750	850	450	500	950	864	950	900	900	800	600	825
Average Diameter of Casing (inches)	5	5	5	5	4.5	4.5	4.5	4.5	5	5	5	0	0	5
Wellfield Fencing														
Length of Fencing (ft)	16,487	11580	7388	25047	7074	0	23271	23271	21887	21595	10000	19732	0	8674

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Labor Costs		**Rate ($)**	**Net Benefits***	**Units**	**Source**
Environmental Manager/RSO		$46.00	$64.40	hour	MSEC**
Restoration Manager		$40.00	$56.00	hour	MSEC
Environmental Tech/HPT		$25.00	$35.00	hour	MSEC
Operator/Laborer		$26.00	$36.40	hour	MSEC
Maintenance Tech		$23.00	$32.20	hour	MSEC
*Includes additional 40% net benefits based on InfoMine USA cost data for Surface Metal and Industrial Mineral Mines - Western U.S. (Table 5)					
**Mountain States Employers Council, 2012 Survey, Mining Industry Compensation & Benefits					
Utility Costs		**Rate ($)**	**Profit & Overhead**	**Units**	**Source**
Electrical Costs		$0.0648	included	kWhr	Actual Costs-2013
Kilowatt to Horsepower		0.746	included	Kw/HP	N/A
Efficiency - Downhole Pumps		80%	included	Percent	N/A
Efficiency - Surface Pumps		90%	included	Percent	N/A
Natural Gas - CPP/Main Office Area		$33,817.00	included	year	Actual Costs-2013
Natural Gas - Satellite SR-1		$4,180.00	included	year	Actual Costs-2013
Propane - CPP/Main Office Area		$0.00	included	year	Actual Costs-2013
Propane - Satellite SR-2		$47,202.97	included	year	Actual Costs-2013
Chemical & Materials Costs		**Rate ($)**	**Profit & Overhead**	**Units**	**Source**
Antiscalant for RO (Hypersperse)		$3.9050	included	pound	Actual Costs-2013
Antiscalant for RO (ScaleTrol)		$4.5177	included	pound	Actual Costs-2013
Sodium Tripolyphosphate		$1.0893	included	pound	Actual Costs-2013
EDTA Tetrasodium Dihydrate		$1.8774	included	pound	Actual Costs-2013
Sodium Sulfide		$0.5520	included	pound	Quote-2013
Hydrochloric Acid		$0.1992	included	pound	Actual Costs-2013
Barium Chloride		$0.7970	included	pound	Actual Costs-2013
Iron Aggregate		$0.5516	included	pound	Actual Costs-2013
Silica Sand		$0.1407	included	pound	Actual Costs-2011
Pea Gravel		$0.0190	included	pound	Actual Costs-2013
Analytical Costs		**Rate ($)**	**Profit & Overhead**	**Units**	**Source***
Modified Guideline 8		$249.00	included	analysis	Quote: 2012-13
Excursion Parameters (UCL)		$30.00	included	analysis	Fee Schedule-2013
Restoration Progress Parameters (UCL + U + Se)		$50.00	included	analysis	Fee Schedule-2013
Irrigator Fluid		$245.00	included	analysis	Actual Costs-2012
Irrigator Vegetation		$270.00	included	analysis	Actual Costs-2012
Irrigator Soil		$255.00	included	analysis	Actual Costs-2012
Irrigator Soil Water		$150.00	included	analysis	Fee Schedule-2013
Other (Radon, Bioassay, etc.)		$1,000.00	$1,100.00	analysis	Cost Estimate
*All quotes, fee schedules and actual costs based on Energy Laboratories, Inc., Casper, WY					
Equipment Costs		**Rate ($)**	**Profit & Overhead***	**Units**	**Source**
Bandit 1290XP Trailer Mounted Brush Chipper		$47.93	$52.72	hour	Equipment Watch**
Bobcat S250 Skid Steer Loader		$36.57	$40.23	hour	Equipment Watch
Cat 320C L Trackhoe - 1.25 cu yd bucket		$100.03	$110.03	hour	Equipment Watch
Cat 416E Backhoe		$34.97	$38.47	hour	Equipment Watch
Cat 924H Loader - 2.4 cu yd bucket		$52.93	$58.22	hour	Equipment Watch
Concrete Jaws Labounty - CP-60		$18.51	$20.36	hour	Equipment Watch
GEHL DL-8 Rough Terrain Lift Truck		$56.44	$62.08	hour	Equipment Watch
Manlift		$47.54	$52.29	hour	Equipment Watch
MIT Unit		$30.09	$33.10	hour	Equipment Watch
Pick-up Truck 3/4 ton 4X4		$20.13	$22.14	hour	Equipment Watch
Pulling Unit***		$35.32	$38.85	hour	Equipment Watch
*Includes additional 10% Profit & Overhead per WDEQ/LQD Guidline No. 12, Section 12(b)					
**Equipment Watch Rental Rate Blue Book: Volume 1 (1st Half 2013)					
***1 3/4 Ton 4x4 Truck with Hoist					
Quoted Costs		**Rate ($)**	**Profit & Overhead**	**Units**	**Source**
Deep Disposal Well - Plug & Abandonment Costs		$13.62	included	foot	UIC Permit-2012
Deep Disposal Well - MIT Costs		$31,625	included	well	Quote-2013
Well Replacements (Restoration)		$14,763	included	well	Actual Costs-2013
Bellhole Refurbishment		$5,530	included	bellhole	Contract-2012
Header House Refurbishment		$10,000	included	header house	Actual Costs-2013
WDEQ/LQD Guideline No. 12 Costs	**Appendix**	**Rate ($)**	**Profit & Overhead***	**Units**	**Source**
Moving Materials: One-Way Distance 500 feet, 0% grade	Appendix C	$1.099	$1.209	bcy	Guideline-10/2013
Moving Materials: One-Way Distance 1,000 feet, 0% grade	Appendix C	$1.313	$1.444	bcy	Guideline-10/2013
Moving Materials: One-Way Distance 2,000 feet, 0% grade	Appendix C	$1.701	$1.871	bcy	Guideline-10/2013
Moving Materials: One-Way Distance 50 feet, 0% grade	Appendix E	$0.160	$0.176	lcy	Guideline-10/2013
Moving Materials: One-Way Distance 100 feet, 0% grade	Appendix E	$0.270	$0.297	lcy	Guideline-10/2013
Moving Materials: One-Way Distance 150 feet, 0% grade	Appendix E	$0.351	$0.386	lcy	Guideline-10/2013
Grading Operating Costs	Appendix G	$77.31	$85.04	acre	Guideline-10/2013
Fencing Removal	Appendix H	$0.39	$0.43	foot	Guideline-10/2013
Ripping Operating Costs (Asphalt)	Appendix I	$881.17	$969.29	acre	Guideline-10/2013

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Ripping Operating Costs (Overburden)	Appendix I1	$1,255.70	$1,381.27	acre	Guideline-10/2013	
Building Demolition - Mixture of Types	Appendix K	$0.287	$0.32	ft3	Guideline-10/2013	
Building Demo Disposal (Average)	Appendix K	$9.62	$10.58	cy	Guideline-10/2013	
Concrete (Floor) Demolition - 6" Thick with Rebar	Appendix K	$5.48	$6.03	ft2	Guideline-10/2013	
Concrete (Footing) Demolition - 2' Thick, 3' Wide	Appendix K	$20.21	$22.23	linear foot	Guideline-10/2013	
Concrete Disposal On-Site	Appendix K	$8.29	$9.12	cy	Guideline-10/2013	
Drill Hole Abandonment: Wet Exploration Holes >25 holes	Appendix L	$3.00	$3.30	foot	Guideline-10/2013	
Well Abandonment: Monitor, Production, and Injection Wells	Appendix L	$2.50	$2.75	foot	Guideline-10/2013	
Incidental Costs: Small Site Grading and Seeding (<1000 sq. feet)	Appendix L	$50	$55	site	Guideline-10/2013	
Incidental Costs: Capping	Appendix L	$10	$11	each	Guideline-10/2013	
Incidental Costs: Site Location	Appendix L	$10	$11	hole	Guideline-10/2013	
Incidental Costs: Remove Pump, Wiring, and Drop Pipe	Appendix L	$0.40	$0.44	foot	Guideline-10/2013	
Incidental Costs: Remove and Dispose Casing (top few feet)	Appendix L	$30	$33	well	Guideline-10/2013	
Incidental Costs: Monitoring Well Concrete Pedestal Disposal	Appendix L	$100	$110	each	Guideline-10/2013	
Scarification Costs	Appendix P	$70.91	$78.00	acre	Guideline-10/2013	
Revegetation Costs-Seed	Appendix Q	$106	$117	acre	Actual Costs-2013	
Revegetation Costs-Mulch	Appendix Q	$91.88	$101.07	acre	Actual Costs-2013	
Revegetation Costs-Fertilizer	Appendix Q	$300.00	$330.00	acre	Actual Costs-2013	
Revegetation Costs-Total	Appendix Q	$497.88	$547.67	acre	Actual Costs-2013	
*Includes additional 10% Profit & Overhead per WDEQ/LQD Guidline No. 12, Section 12(b)						
Construction & Demolition Debris Transportation & Disposal Costs						
Building Volume for Disposal	0.33					
Void Factor (for disposal)	1.1					
	Disposal ($/ton)	**C&D (cy/ton)**	**Tranport ($/load)**	**C&D (cy/load)**	**Total ($/cy)**	**Total ($/ft3)**
C&D Debris (county landfill)	$62.00	2	$335.00	30	$42.17	$1.56
*Transportation and disposal costs based on actual costs (2013). Transportation and disposal costs include profit and overhead of service provider. Conversion factors of 2 cy/ton and 0.33 to account for air space in buildings based on FEMA - Debris Estimating Field Guide, FEMA 320, September 2010.						
11e.(2) Byproduct Material Transportation & Disposal						
Load Correction Factor: Soil, sand, etc.	1.1					
Load Correction Factor: Process materials, etc.	0.42					
White Mesa	**Disposal ($/ton)**	**Disposal ($/cy)**	**Volume (cy)**	**Tranport ($/cy)**	**Total ($/cy)**	**Total ($/ft3)**
Type I: Soil, sand, gravel, rock, concrete rubble,etc.	$138.97	$152.87	13.0	$247.95	$400.82	$14.85
Type II: Process material, pumps, motors, etc.	$160.08	$67.23	24.7	$130.50	$197.73	$7.32
Type II: Chipped piping	$160.08	$67.23	36.4	$88.55	$155.78	$5.77
Pathfinder						
Type I: Soil, sand, rock, gravel, demolition masonry, concrete rubble	N/A	$130.00	13.0	$26.73	$156.73	$5.80
Type II: Other process waste, process equipment, etc.	N/A	$378.00	24.7	$14.07	$392.07	$14.52
Type II: Chipped piping	N/A	$378.00	36.4	$9.55	$387.55	$14.35
*Transportation and disposal costs based on contract amounts as adjusted annually. Transportation and disposal costs include profit and overhead of service provider and include all unloading and decontamination fees, waste tax, fuel surcharges, etc. Tranportation costs assume 1) one truck transports one 13-cy bin of Type I waste, 2) one truck transports one 24.7-cy bin of Type II process waste (including pumps, motors, etc.) and 3) one truck tranports one 36.4-cy bin of Type II chipped piping waste.						

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GROUNDWATER RESTORATION UNIT COSTS		
Wellfield Pumping		
Equipment		
Wellfield Pump Sizes	5	hp
Wellfield Pump Flow Rate	25	gpm
kW to HP Conversion Factor	0.746	
Cost of Electricity	$0.0648	kWhr
Efficiency	80%	
Wellfield Pumping Cost	$0.20	per kgal
Satellite Pumping		
Equipment		
Satellite Pump Sizes	60	hp
Satellite Pump Flow Rate	75	gpm
kW to HP Conversion Factor	0.746	
Cost of Electricity	$0.0648	kWhr
Efficiency	90%	
Satellite Pumping Cost	$0.72	per kgal
Deep Disposal Well Injection		
Equipment		
Deep Disposal Well Pump Size	75	hp
Deep Disposal Well Flow Rate	75	gpm
kW to HP Conversion Factor	0.746	
Cost of Electricity	$0.0648	kWhr
Efficiency	90%	
Reagent		
Antiscalant Cost (Scaletrol)	$4.5177	per lb
Density of Water	8.34	lbs/gal
Specific Gravity (Scaletrol)	1.284	
Antiscalant Cost (Scaletrol)	$48.38	per gal
Antiscalant Dose (ScaleTrol)	0.0000048	gal/gal
Deep Disposal Well Cost	**$1.13**	**per kgal**
Total Groundwater Sweep Costs	**$2.04**	**per kgal**
Reverse Osmosis		
Equipment		
System Capacity	250	gpm
Unit Pump	60	hp
Injection Pump	60	hp
Waste Pump	15	hp
kW to HP Conversion Factor	0.746	
Cost of Electricity	$0.0648	kWhr
Efficiency	90%	
Reagents		
Tripolyphosphate Usage Rate	0.00000130	lb/gal
Tripolyphosphate Cost	$1.0893	per lb
EDTA Usage Rate	0.00000315	lb/gal
EDTA Cost	$1.8774	per lb
Antiscalant Cost (Hypersperse)	$3.9050	per lb
Density of Water	8.34	lbs/gal
Specific Gravity (Hypersperse)	1.124	
Antiscalant Cost (Hypersperse)	$36.6061	per gal
Antiscalant Dose (Hypersperse)	0.0000036	gal/gal
Sodium Sulfide Usage Rate	0.00017	lb/gal
Sodium Sulfide Cost	$0.5520	per lb
RO Cost (without Reductant)	**$0.62**	**per kgal**
RO Cost (with Reductant)	**$0.71**	**per kgal**
MIT Costs for Production Wells		
Equipment		
Pulling Unit Hours	4	hrs/day
Pulling Unit Cost	$38.85	$/hour
MIT Unit Hours	8	hrs/day
MIT Unit Cost	$33.10	$/hour
Labor		

Required Hours	8	hrs/day
Required Laborers	1.5	per day
Labor Cost	$32.20	$/hour
Productivity	4	wells/day
MIT Cost for Production Wells	**$201.65**	**per well**
MIT Costs for Injection Wells		
Equipment		
Pulling Unit Hours	0	hrs/day
Pulling Unit Cost	$38.85	$/hour
MIT Unit Hours	8	hrs/day
MIT Unit Cost	$33.10	$/hour
Labor		
Required Hours	8	hrs/day
Required Laborers	1	per day
Labor Cost	$32.20	$/hour
Productivity	4	wells/day
MIT Cost for Injection Wells	**$130.60**	**per well**
Booster Pump Operating Cost		
Equipment		
Wellfield Pump Sizes	40	hp
Number of Pumps Running (avg.)	9	per year
Hours Running	24	per day
kW to HP Conversion Factor	0.746	
Cost of Electricity	$0.0648	kWhr
Efficiency	90%	
Booster Pump Operating Costs	**$169,386.16**	**per year**
WELL ABANDONMENT UNIT COSTS		
Removal of Contaminated Soil Around Wells		
Equipment		
Cat 416 Backhoe Time	0.25	hours
Cat 416 Backhoe Cost	$38.47	per hour
Labor		
Radiation Technician	0.25	hours
Radiation Technician Cost	$35.00	per hour
Operator	0.25	hours
Operator Cost	$36.40	per hour
Disposal		
ByProduct Disposal	0.37	cubic yard
Disposal Cost (incl. Transport)	$156.73	per cubic yard
Removal of Contaminated Soil Cost	**$85.46**	**per well**
DDW Pump Dismantling and Disposal		
Labor		
Number of Laborers	2	per day
Number of Pumps Dismanteled	0.5	per day
Hours Per Day	8	hours
Laborers Cost	$32.20	
Disposal		
Volume of DDW Pump	240	ft^3
ByProduct Disposal	$7.32	per ft^3
DDW Pump Dismanteling and Disposal	**$2,788.03**	**per pump**
WELLFIELD RECLAMATION COSTS		
Wellfield Piping Removal		
Equipment		
Trackhoe	1	per day
Trackhoe Cost	$110.03	per hour
Loader	1	per day
Loader Cost	$58.22	per hour
Pickup Truck	1	per day
Pickup Cost	$22.14	per hour
Chipper Cost	$52.72	per hour

Labor		
Backhoe Operator	$36.40	per hour
Loader Operator	$36.40	per hour
Laborer	$32.20	per hour
Hours Per Day	8	per day
Productivity	1500	ft/day
Piping Removal Cost	**$1.86**	**per foot of pipe**
Piping Reduction		
2" Pipe	0.0107	
3" Pipe	0.0233	
4" Pipe	0.0385	
6" Pipe	0.0834	
8" Pipe	0.1413	
10" Pipe	0.2196	
12" Pipe	0.3088	
14" Pipe	0.3723	
16" Pipe	0.4864	
18" Pipe	0.6155	
Trunk Line Removal		
Equipment		
Trackhoe	1	per day
Trackhoe Cost	$110.03	per hour
Loader	1	per day
Loader Cost	$58.22	per hour
Pickup Truck	1	per day
Pickup Cost	$22.14	per hour
Chipper Cost	$52.72	per hour
Labor		
Trackhoe Operator	$36.40	per hour
Loader Operator	$36.40	per hour
Laborer	$32.20	per hour
Hours Per Day	8	per day
Productivity	750	ft/day
Buried Piping Removal Cost	**$3.71**	**per foot of pipe**
Production Pump Volume		
Length	66	inches
Diameter	3.8	inches
Cubic Inch to Cubic Foot Conversion	0.0006	
Production Pump Volume	**0.43**	cubic feet
Removal of Well Head Covers		
Volume of Well Head Cover (ft^3)	1.86	cubic feet
Demolition Cost	$0.316	per cubic ft
Decontamination		
Acid Usage	4.1	pounds per wellhead cover
Acid Cost	$0.20	per wellhead cover
Labor		
Radiation Tech	$35.00	per hour
Operator	$36.40	per hour
Productivity	10	wellheads per hour
Disposal		
Void space	10%	
Transportation and Disposal Cost	$1.56	per cubic ft
Removal of Well Head Cover Cost	**$11.74**	**per well**
Header House Decontamination		
Decontamination		

Acid Usage	20	pounds per header house
Acid Cost	$0.20	per pound
Labor		
Radiation Tech	$35.00	per hour
Number of Operators	2	per day
Operator	$36.40	per hour
Hours Per Day	8	per day
Productivity	1	header house per day
Header House Decontamination Cost	**$621**	**per header house**
Header House Heating		
Heater Power Usage	7.5	kW/day
Days Used	180	days per year
Electricity Cost	$0.0648	kWhr
Header House Heating Cost	**$1,050**	**per year**
WELLFIELD AND SATELLITE AND SURFACE RECLAMATION		
Wellfield Road Reclamation		
Gravel Road Base		
Average Depth	0.25	feet
Average Width	10	feet
Material Moved (0% Grade)	$1.44	bcy
Cubic Yard to Cubic Feet Conversion	0.04	
Scarification of Road		
Scarification Costs	$78	per acre
Average Width	25	feet
Acre to Sq. Foot Conversion	2.29568E-05	
Grading Cost	$85	per acre
Topsoil Depth	0.67	feet
Discing/Seeding Costs	$548	
Linear Feet for Unit Cost	1000	feet
Wellfield Road Reclamation Cost	**$1,437.62**	**per 1000 feet**
EQUIPMENT COSTS		
Tank Removal		
Equipment		
Loader	$58.22	per hour
Trackhoe	$110.03	per hour
Manlift	$52.29	per hour
Pickup	$22.14	per hour
Lift Truck	$62.08	per hour
Labor		
Number of Operators	4	
Operator Cost	$36.40	per hour
Hours Per Day	8	per day
Productivity	25	ft^3/day
Tank Removal Cost	**$144**	**per ft^3**
Pipe Removal		
Equipment		
Manlift	$52.29	per hour
Pickup	$22.14	per hour
Lift Truck	$62.08	per hour
Chipper	$52.72	per hour
Labor		
Number of Operators	4	
Operator Cost	$36.40	per hour
Hours Per Day	8	per day
Productivity	300	ft/day
Pipe Removal Cost (Inside Buildings)	**$8.93**	**per ft**
Pump Removal		
Equipment		
Truck	$22.14	per hour
Skid Steer	$40.23	per hour

Labor		
Number of Operators	2	
Operator Cost	$36.40	per hour
Hours Per Day	8	per day
Productivity	10	ft^3/day
Pump Removal	**$108.14**	**per ft^3**
Dryer Removal		
Equipment		
Truck	$22.14	per hour
Lift Truck	$62.08	per hour
Labor		
Number of Operators	4	
Operator Cost	$36.40	per hour
Hours Per Day	8	per day
Productivity	125	ft^3/day
Dryer Removal Cost	**$14.71**	**per ft^3**
RO and Degasser Removal		
Equipment		
Truck	$22.14	per hour
Lift Truck	$62.08	per hour
Labor		
Number of Operators	2	
Operator Cost	$36.40	per hour
Hours Per Day	8	per day
Productivity	250	ft^3/day
RO and Degasser Removal Cost	**$5.02**	**per ft^3**
BUILDING COSTS		
Acid Wash Walls		
Acid		
Acid Usage	0.05	per square foot
Acid Cost	$0.20	per pound
Equipment		
Manlift	$52.29	per hour
Labor		
Laborer	2	people
Laborer Cost	$32.20	per hour
Productivity	125	square feet per hour
Acid Wash Walls Cost	**$0.94**	**per square foot**
Acid Wash Floors		
Acid		
Acid Usage	0.05	per square foot
Acid Cost	$0.20	per pound
Labor		
Laborer	2	people
Laborer Cost	$32.20	per hour
Productivity	125	square feet per hour
Acid Wash Floors Cost	**$0.53**	**per square foot**
Eletrical Power		
*Pumping Costs for Operating DDWs, RO, and Wellfield are included in GW Rest Costs		
CPP		
Miscellaneous Pumps, Fans, Sumps, etc.	27.5	HP
Lighting	35.0625	kW (per square ft)
kW to HP Conversion Factor	0.746	
Electricity Cost	$0.0648	per kWhr
Efficiency Factor	90%	
Operating Hours Per Year	8760	hours
CPP Power Cost	**$30,384**	**per year**
SR 1 & SR 2 Power Costs		
Miscellaneous Pumps, Fans, Sumps, etc.	72.5	HP

Cameco Resources
Smith Ranch Uranium Project
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Lighting	24	kW
kW to HP Conversion Factor	0.746	kW (per square ft)
Electricity Cost	$0.0648	per kWhr
Efficiency Factor	90%	
Operating Hours Per Year	8760	hours
SR 1 & SR 2 Power Costs	**$41,255**	**per year**
Reynolds Ranch Power Costs		
Miscellaneous Pumps, Fans, Sumps, etc.	72.5	HP
Lighting	24	kW
kW to HP Conversion Factor	0.746	kW (per square ft)
Electricity Cost	$0.0648	per kWhr
Efficiency Factor	90%	
Operating Hours Per Year	8760	hours
Reynolds Ranch Power Costs	**$41,255**	**per year**
DDW - Typical		
Miscellaneous Pumps, Fans, Sumps, etc.	2	HP
Lighting	0.4875	kW
Heating	12.5	kW
kW to HP Conversion Factor	0.746	kW (per square ft)
Electricity Cost	$0.0648	per kWhr
Efficiency Factor	90%	
Operating Hours Per Year	8760	hours
DDW Electrical Cost	**$4,587**	**per year**
Maintenance Shop Power Costs		
Miscellaneous Pumps, Fans, Sumps, etc.	2	HP
Lighting	8.785	kW
kW to HP Conversion Factor	0.746	kW (per square ft)
Electricity Cost	$0.0648	per kWhr
Efficiency Factor	90%	
Operating Hours Per Year	8760	hours
Maintenance Shop Power Costs	**$5,749**	**per year**
Fresh Water Pumphouse Power Costs		
Miscellaneous Pumps, Fans, Sumps, etc.	10	HP
Lighting	1.04	kW
Heating	10	kW
kW to HP Conversion Factor	0.746	kW (per square ft)
Electricity Cost	$0.0648	per kWhr
Efficiency Factor	90%	
Operating Hours Per Year	8760	hours
Fresh Water Pumphouse Power Costs	**$10,078**	**per year**
Office Building Power Costs		
Miscellaneous Pumps, Fans, Sumps, etc.	7.5	HP
Lighting	10	kW
Air Conditioning	30	kW
kW to HP Conversion Factor	0.746	kW (per square ft)
Electricity Cost	$0.0648	per kWhr
Efficiency Factor	90%	
Operating Hours Per Year	8760	hours
Office Building Power Costs	**$25,564**	**per year**
MISCELLANEOUS RECLAMATION AND RESTORATION COSTS		
Liner and Subsoil Removal Costs		
Equipment		
Trackhoe Cost	$ 110.03	per hour
Loader Cost	$ 58.22	per hour
Labor		
Operator	36.40	per hour
Productivity	40	cubic yards/hour
Total Removal	**$ 5.12**	**per cubic yard**

Cameco Resources
Highland Operations
2014-15 Surety Estimate

Total Restoration and Reclamation Cost Estimate			
I.	Groundwater Restoration (GWR-WF and GWR-SITE Sheets)		$52,125,527
II.	Well & Drill Hole Abandonment (WA Sheet)		$9,418,436
III.	Wellfield Buildings & Equipment Removal & Disposal (WF BLDGS Sheet)		$5,215,961
IV.	Wellfield & Satellite Surface Reclamation (WF REC Sheet)		$540,605
V.	Equipment Removal and Disposal (EQUIP Sheet)		$752,980
VI.	Building Demolition and Disposal (BLDGS Sheet)		$3,189,557
VII.	Miscellaneous Reclamation (MISC REC Sheet)		$7,293,180
	Subtotal Restoration and Reclamation Cost Estimate		$78,536,246
	Contractor Profit & Overhead (10%)[1]	See Master Costs	
	Contingency (15%)[2]	15%	$11,780,437
		TOTAL[3]	$90,316,700

[1], Per WDEQ/LQD Guideline No. 12, Section 12(b)

[2], Per WDEQ/LQD Guideline No. 12, Section 12(a) and (c-h), Section 13 and NRC License Condition 9.5 (SUA-1548)

[3], Costs reflect both WDEQ & NRC requirements. No salvage value assumed.

Cameco Resources
Highland Uranium Project
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Ground Water Restoration -Wellfield	A-Wellfield	B-Wellfield	C-Wellfield	C-22 Pattern	C Haul Drifts	D-Wellfield	D-Extension	E-Wellfield	F-Wellfield	H-Wellfield	I-Wellfield	J-Wellfield	J-Extension
I. Ground Water Sweep Costs													
Estimated PV's	0	0	0	0	0	0	0	0.5	1	1	1	1	1
Total kgals for GWS	0	0	0	0	0	0	0	45,540	232,890	90,864	84,780	66,812	50,673
Bleed to Deep Disposal Well (%)	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Groundwater Sweep Unit Cost ($/kgal)	$1.32	$1.32	$1.32	$1.32	$1.32	$1.32	$1.32	$1.32	$1.32	$1.32	$1.32	$1.32	$1.32
Subtotal Ground Water Sweep Costs per Wellfield	$0	$0	$0	$0	$0	$0	$0	$30,127	$308,141	$120,224	$112,174	$88,400	$67,046
Total Ground Water Sweep Costs	**$659,066**												
II. Reverse Osmosis Costs													
Estimated PV's	0	0	0	0	0	0	0	3	4.5	4.5	4.5	4.5	4.5
Total Kgals for RO	0	0	0	0	0	0	0	273,240	1,048,005	408,888	381,510	300,654	228,029
Wellfield Pumping Cost	$0.20	$0.20	$0.20	$0.20	$0.20	$0.20	$0.20	$0.20	$0.20	$0.20	$0.20	$0.20	$0.20
Reverse Osmosis Unit Cost ($/kgal)	$0.62	$0.62	$0.62	$0.62	$0.62	$0.62	$0.62	$0.62	$0.62	$0.62	$0.62	$0.62	$0.62
Bleed to Deep Disposal Well (%)	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%
Brine Volume for Disposal	0	0	0	0	0	0	0	54,648	209,601	81,778	76,302	60,131	45,606
DDW Disposal Cost($/kgal)	$1.13	$1.13	$1.13	$1.13	$1.13	$1.13	$1.13	$1.13	$1.13	$1.13	$1.13	$1.13	$1.13
Permeate Volume for Re-Use	0	0	0	0	0	0	0	218,592	838,404	327,110	305,208	240,523	182,423
Satellite Pumping Cost ($/kgal)	$0.72	$0.72	$0.72	$0.72	$0.72	$0.72	$0.72	$0.72	$0.72	$0.72	$0.72	$0.72	$0.72
Subtotal Reverse Osmosis Costs per Wellfield	$0	$0	$0	$0	$0	$0	$0	$441,288	$1,692,550	$660,363	$616,147	$485,562	$368,271
Total Reverse Osmosis Costs	**$3,895,910**												
III. Reverse Osmosis with Chemical Reductant Costs													
Estimated PV's	0	0	1.5	1	1	1	1	3	3.5	3.5	3.5	3.5	3.5
Total kgals for RO	0	0	127,233	19,691	0	32,309	19,233	273,240	815,115	318,024	296,730	233,842	177,356
Wellfield Pumping Cost	$0.20	$0.20	$0.20	$0.20	$0.20	$0.20	$0.20	$0.20	$0.20	$0.20	$0.20	$0.20	$0.20
Reverse Osmosis with Chemical Reductant Unit Cost ($/kgal)	$0.71	$0.71	$0.71	$0.71	$0.71	$0.71	$0.71	$0.71	$0.71	$0.71	$0.71	$0.71	$0.71
Bleed to Deep Disposal Well (%)	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%
Brine Volume for Disposal (kgal)	0	0	25,447	3,938	0	6,462	3,847	54,648	163,023	63,605	59,346	46,768	35,471
DDW Disposal Cost($/kgal)	$1.13	$1.13	$1.13	$1.13	$1.13	$1.13	$1.13	$1.13	$1.13	$1.13	$1.13	$1.13	$1.13
Permeate Volume for Re-Use	0	0	101,786	15,753	0	25,847	15,386	218,592	652,092	254,419	237,384	187,074	141,884
Satellite Pumping Cost ($/kgal)	$0.72	$0.72	$0.72	$0.72	$0.72	$0.72	$0.72	$0.72	$0.72	$0.72	$0.72	$0.72	$0.72
Subtotal RO with Chemical Reductant Costs per Wellfield	$0	$0	$217,423	$33,649	$0	$55,212	$32,867	$466,929	$1,392,918	$543,459	$507,070	$399,603	$303,076
Total Reverse Osmosis with Chemical Reductant Costs	**$3,952,206**												
IV. Mechanical Integrity Testing (MIT) Costs													
Pre-Restoration, Restoration and Stability Period (yrs)	0	0	2	2	2	2	2	5	21	8	7	17	14
Number of Injection Wells	1	194	258	0	0	143	0	229	704	285	234	233	112
Number of MITs per Injection Well	0.0	0.0	0.4	0.4	0.4	0.4	0.4	1.0	4.2	1.6	1.4	3.4	2.8
MIT Costs per Injection Well	$130.60	$130.60	$130.60	$130.60	$130.60	$130.60	$130.60	$130.60	$130.60	$130.60	$130.60	$130.60	$130.60
Subtotal MIT Costs per Wellfield	$0	$0	$13,478	$0	$0	$7,470	$0	$29,907	$386,152	$59,553	$42,784	$103,460	$40,956
Total Wellfield MIT Costs	**$683,760**												
V. Wellfield Refurbishment Costs													
Well Replacement (#)	0	0	5	0	0	0	0	10	180	5	10	18	0
Replacement ($/well)	$14,763	$14,763	$14,763	$14,763	$14,763	$14,763	$14,763	$14,763	$14,763	$14,763	$14,763	$14,763	$14,763
Bellhole Refurbishment (#)	0	0	0	0	0	0	0	0	0	0	6	0	0
Refurbishment ($/bellhole)	$5,530	$5,530	$5,530	$5,530	$5,530	$5,530	$5,530	$5,530	$5,530	$5,530	$5,530	$5,530	$5,530
Header House Refurbishment (#)	0	0	0	0	0	0	0	0	26	0	0	0	0
Refurbishment ($/header house)	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000
Subtotal Refurbishment Cost per Wellfield	$0	$0	$73,815	$0	$0	$0	$0	$147,630	$2,917,340	$73,815	$180,810	$265,734	$0
Total Wellfield Refurbishment Cost	**$3,659,144**												
VI. Monitoring and Sampling Costs													
A. Pre-Restoration Monitoring													
1. Excursion Monitoring (M, MO and MU wells, twice per month)													
# of Wells	0	0	0	0	0	0	0	0	90	72	29	42	20

Cameco Resources
Highland Uranium Project
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Ground Water Restoration -Wellfield	A-Wellfield	B-Wellfield	C-Wellfield	C-22 Pattern	C Haul Drifts	D-Wellfield	D-Extension	E-Wellfield	F-Wellfield	H-Wellfield	I-Wellfield	J-Wellfield	J-Extension
Total # samples	0	0	0	0	0	0	0	0	15120	0	0	8064	3840
UCL Parameters ($/sample)	$30.00	$30.00	$30.00	$30.00	$30.00	$30.00	$30.00	$30.00	$30.00	$30.00	$30.00	$30.00	$30.00
Subtotal Pre-Restoration Monitoring Costs per Mine Unit	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$453,600.00	$0.00	$0.00	$241,920.00	$115,200.00
Total Pre-Restoration Monitoring Costs	$810,720.00												
B. Restoration Monitoring													
1. Sampling Prior to Start-up (MP Wells)													
# of Wells	0	0	0	0	0	0	0	0	21	12	6	12	5
Modified Guideline 8 ($/sample)	$249.00	$249.00	$249.00	$249.00	$249.00	$249.00	$249.00	$249.00	$249.00	$249.00	$249.00	$249.00	$249.00
2. Restoration Progress Monitoring (MP Wells, every 2 months)													
# of Wells	0	0	32	0	11	9	5	29	21	12	6	12	5
Total # samples	0	0	192	0	66	54	30	696	1638	504	216	576	150
Restoration Progress Parameters ($/sample)	$50.00	$50.00	$50.00	$50.00	$50.00	$50.00	$50.00	$50.00	$50.00	$50.00	$50.00	$50.00	$50.00
3. Excursion Monitoring (M, MO and MU wells, every 2 months)													
# of Wells	0	0	71	0	0	22	16	51	90	72	29	42	20
Total # samples	0	0	426	0	0	132	96	1224	7020	3024	1044	2016	600
UCL Parameters ($/sample)	$30.00	$30.00	$30.00	$30.00	$30.00	$30.00	$30.00	$30.00	$30.00	$30.00	$30.00	$30.00	$30.00
Subtotal Restoration Monitoring Costs per Mine Unit	$0.00	$0.00	$22,380.00	$0.00	$3,300.00	$6,660.00	$4,380.00	$71,520.00	$297,729.00	$118,908.00	$43,614.00	$92,268.00	$26,745.00
Total Restoration Monitoring Costs	$660,759												
C. Stability Monitoring													
1. Beginning of stability (MP wells)													
# of Wells	0	0	32	0	11	9	5	29	21	12	6	12	5
Modified Guideline 8 ($/sample)	$249.00	$249.00	$249.00	$249.00	$249.00	$249.00	$249.00	$249.00	$249.00	$249.00	$249.00	$249.00	$249.00
2. Quarterly sampling (MP wells)													
# of Wells	0	0	32	0	11	9	5	29	21	12	6	12	5
Total # samples	0	0	128	0	44	36	20	116	84	48	24	48	20
Modified Guideline 8 ($/sample)	$249.00	$249.00	$249.00	$249.00	$249.00	$249.00	$249.00	$249.00	$249.00	$249.00	$249.00	$249.00	$249.00
3. Monitor Well Sampling (M wells, every 2 months)													
# of Wells	0	0	37	0	0	17	10	26	48	45	20	28	20
Total # samples	0	0	222	0	0	102	60	156	288	270	120	168	120
UCL Parameters ($/sample)	$30.00	$30.00	$30.00	$30.00	$30.00	$30.00	$30.00	$30.00	$30.00	$30.00	$30.00	$30.00	$30.00
Subtotal Stability Monitoring Costs per Mine Unit	$0.00	$0.00	$46,500.00	$0.00	$13,695.00	$14,265.00	$8,025.00	$40,785.00	$34,785.00	$23,040.00	$11,070.00	$19,980.00	$9,825.00
Total Stability Monitoring Costs	$212,145.00												
D. Other Laboratory Costs													
Radon, Bioassay, etc.	$0	$0	$26,400	$26,400	$26,400	$26,400	$26,400	$66,000	$277,200	$105,600	$92,400	$224,400	$184,800
Subtotal Monitoring and Sampling Costs per Mine Unit	$0	$0	$95,280	$26,400	$43,395	$47,325	$38,805	$178,305	$1,063,314	$247,548	$147,084	$578,568	$336,570
Total Monitoring and Sampling Costs	**$2,802,594**												
VII. Header House Heating Costs													
Number of Header Houses per Unit(s)	5	18	20	0	0	4	3	15	43	10	6	9	5
Pre-Restoration and Restoration Period (yrs)	0	0	1	1	1	1	1	4	20	7	6	16	13
Electrical Heating Costs ($/yr)	$1,050	$1,050	$1,050	$1,050	$1,050	$1,050	$1,050	$1,050	$1,050	$1,050	$1,050	$1,050	$1,050
Subtotal Header House Heating Cost per Wellfield	$0	$0	$20,995	$0	$0	$4,199	$3,149	$62,986	$902,794	$73,483	$37,791	$151,165	$68,234
Total Header House Heating Costs	**$1,324,796**												
TOTAL RESTORATION COST PER WELLFIELD	$0	$0	$420,991	$60,049	$43,395	$114,206	$74,821	$1,357,172	$8,663,209	$1,778,445	$1,643,860	$2,072,492	$1,184,153
TOTAL WELLFIELD RESTORATION COST	**$16,977,476**												

Cameco Resources
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Ground Water Restoration - Site Wide					Deep Disposal Wells		
I.	**Building Utility Costs**	**Satellite No.2**	**Selenium Plant**	**Satellite No.3**	**Morton 1-20**	**Vollman 33-27**	**SRHUP #9**
	Assumptions:						
	Electricity Unit Cost ($/yr)	$28,478	$40,857	$28,478	$4,588	$4,588	$4,588
	Propane ($/yr)	$506	$506	$43,188	$0	$0	$0
	Natural Gas ($/yr)	$9,044	$9,044	$0	$0	$0	$0
	Number of Years	7	18	14	18	18	18
	Subtotal Utility Cost per Building	$266,199	$907,332	$1,003,333	$82,587	$82,587	$82,587
	*Yrs for Satellite No. 2 assumes end of restoration for MU-I						
	*Yrs for Satellite No. 3 assumes end of restoration for MU-K-North						
	Total Building Utility Costs	**$2,424,625**					
II.	**Irrigation Maintenance and Monitoring**	**Irrigator No. 1A**	**Irrigator No. 2**				
	A. Phytoremediation Study						
	Phytoremediation Study, PPCU	$0	$40,000	*Based on two year contract (2013)			
	Phytoremediation Study, University of Wyoming	$0	$82,080	*Based on two year proposal (2012)			
	Subtotal Phytoremediation Studies	$0	$122,080				
	B. Harvesting Costs						
	Irrigation Area (acres)	55	106				
	Harvesting Costs ($/acre)	$250	$250				
	Restoration Period (yrs)	18		* Based on timeline to support Smith Ranch restoration activities			
	Subtotal Harvesting Costs per Irrigator	$247,500	$477,000				
	C. Irrigation Monitoring						
	# of Irrigation Fluid Samples/Year	6	6				
	$/sample	$245	$245				
	# of Vegetation Samples/Year	5	5				
	$/sample	$270	$270				
	# of Soil Samples/Year	30	34				
	$/sample	$255	$255				
	# of Soil Water Samples/Year	12	2				
	$/sample	$150	$150				
	Restoration Period (yrs)	18		* Based on timeline to support Smith Ranch restoration activities			
	Subtotal Monitoring Costs per Irrigator	$220,860	$212,220				
	Subtotal Monitoring and Harvesting Costs per Irrigator	$468,360	$811,300				
	Total Maintenance and Monitoring Costs	**$1,279,660**					
III.	**Selenium Plant Operation Costs**						
	Restoration Period (yrs)	18		* Based on timeline to support Smith Ranch restoration activities			
	Selenium Plant Operating Cost ($/yr)	$157,852					
	Total Selenium Plant Operating Cost	**$2,841,339**					
IV.	**Booster Pump Operation Costs**						
	Restoration Period (yrs)	20					

Cameco Resources
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2013-14 Surety Estimate

	Booster Pump Operating Cost ($/yr)	$37,641.37					
	Total Booster Pump Operating Cost	**$752,827**					
V.	**Infrastructure, Equipment Maintenance,**						
	Replacement and Repair Costs						
	Annual Maintenance Cost ($/yr)	$92,320		*Based on planned expenditures (2013)			
	Restoration Period (yrs)	20					
	Total Cost	**$1,846,400**					
VI.	**Deep Disposal Well MIT Costs**						
	Five-year MIT Costs for Disposal Wells	$31,625.00					
	Number of DDWs	3					
	Number of MITs per DDW	3		* Based on timeline to support Smith Ranch restoration activities			
	Total DDW MIT Cost	**$284,625**					
VII.	**Capital Costs**						
	*Estimates based on planned expenditures (2013)						
	Irrigator No. 1 Pivot Replacement	$906,000					
	SR-HUP Connecting Pipeline	$532,752					
	Total Capital Costs	**$1,438,752**					
VIII.	**Vehicle Operation Costs**						
	Number of Pickup Trucks (Gas)	10					
	Truck Cost ($/hr)	$22.14					
	Average Operating Time (hrs/yr)	1000					
	Restoration and Stability Period (yrs)	21					
	Total Vehicle Operation Cost	**$4,650,030**					
IX.	**Labor Costs**						
	Assumptions:						
	Number of Environmental Managers/RSOs	0.5		*Management positions split between Highland and Smith Ranch			
	$/hr	$64.40					
	Number of Restoration Managers	0.5		*Management positions split between Highland and Smith Ranch			
	$/hr	$56.00					
	Number of Environmental Techs/HPTs	2					
	$/hr	$35.00					
	Number of Operators/Laborers	7					
	$/hr	$36.40					
	Number of Maintenance Technicians	2					
	$/hr	$32.20					
	Hrs/yr	2080					
	Restoration and Stability Period (yrs)	21					
	Total Labor Cost	**$19,629,792**					
TOTAL SITE-WIDE RESTORATION COSTS		**$35,148,051**					

Cameco Resources
Highland Uranium Project
2013-14 Surety Estimate

Well and Drill Hole Abandonment	A-Wellfield	B-Wellfield	C-Wellfield	C-22 Pattern	C Haul Drifts	D-Wellfield	D-Extension	E-Wellfield	F-Wellfield	H-Wellfield	I-Wellfield	J-Wellfield	J-Extension	Other
I. Well Abandonment (Wellfields)														
A. Sealing Costs				Inc in MU-C	Inc in MU-C		Inc in MU-D							
Total # of Wells per Wellfield	8	392	567	0	0	288	0	438	1470	534	411	410	193	3
Production, Injection and Perimeter Well Average Depth (ft)	500	450	550	550	550	600	600	550	650	500	650	540	540	650
Well Abandonment (Sealing) Costs ($/ft)	$2.75	$2.75	$2.75	$2.75	$2.75	$2.75	$2.75	$2.75	$2.75	$2.75	$2.75	$2.75	$2.75	$2.75
Subtotal Sealing Costs per Wellfield	$11,000	$485,100	$857,588	$0	$0	$475,200	$0	$662,475	$2,627,625	$734,250	$734,663	$608,850	$286,605	$5,363
B Casing Removal and Diposal Costs														
Total # of Wells per Wellfield	8	392	567	0	0	288	0	438	1470	534	411	410	193	3
# of Previously Abandoned Wells Pending Release	54	118	180	0	0	86	0	271	330	50	40	20	0	0
Total # of Wells for Casing Removal and Disposal	62	510	747	0	0	374	0	709	1800	584	451	430	193	3
Remove and Dispose Casing ($/well)	$33	$33	$33	$33	$33	$33	$33	$33	$33	$33	$33	$33	$33	$33
Subtotal Casing Removal and Diposal Costs per Wellfield	$2,046	$16,830	$24,651	$0	$0	$12,342	$0	$23,397	$59,400	$19,272	$14,883	$14,190	$6,369	$99
Subtotal Well Abandonment Costs per Wellfield	$13,046	$501,930	$882,239	$0	$0	$487,542	$0	$685,872	$2,687,025	$753,522	$749,546	$623,040	$292,974	$5,462
Total Well Abandonment Costs	**$7,682,198**													
II. Removal of Contaminated Soil Around Wells														
# of Production and Injection Wells	1	327	464	0	0	234	0	379	1343	456	375	365	168	
Removal of Contaminated Soil Around Wells ($/well)	$85.46	$85.46	$85.46	$85.46	$85.46	$85.46	$85.46	$85.46	$85.46	$85.46	$85.46	$85.46	$85.46	
Subtotal Contaminated Soil Removal/Disposal Costs per Wellfield	$85	$27,944	$39,652	$0	$0	$19,997	$0	$32,388	$114,769	$38,968	$32,046	$31,192	$14,357	
Total Contaminated Soil Removal/Disposal Costs	**$351,398**													
III. Drill Hole Abandonment														
A. Drill Hole Plug and Abandonment														
# of Drill Holes Pending Bond Release														
2009-10	89													
2010-11	133													
2011-12	195													
2012-13	95													
2013-14	2													
Total # of Drill Holes	514													
# of Projected Drill Holes														
2014-15	300													
Total # of Drill Holes	814													
% of Drill Holes Requiring Bentonite Top 100 ft	20%													
Total Footage Requiring Abandonment (ft)	16,280													
Hole Abandonment ($/ft)	$3.30													
Subtotal Plug and Abandonment Costs	$53,724													
Projected Drill Hole Abandonment; ave depth 800ft	$792,000													
B. Incidental Costs														
Total # of Drill Holes	814													
Site Location ($/hole)	$11													
Capping ($/hole)	$11													
Small Site Grading and Seeding ($/site)	$55													
Subtotal Incidental Costs	$62,678													
Total Delineation Hole Abandonment	**$908,402**													
IV. Waste Disposal Well Abandonment	**Morton No. 1-20**	**Vollman No. 33-27**	**SRHUP # 9**											
A. Well Sealing														
Total Depth of Well	9,206	14,412	9,500											
Sealing Cost Per Foot	$13.62	$13.62	$13.62											
*Sealing costs per foot includes surface reclamation costs														
Subtotal Plugging Costs per Well	$125,386	$196,291	$129,390											
B. Pump Dismantling and Decontamination														
Number of Pumps	2	2	2											
Pump Dismantling and Disposal Cost	$2,788	$2,788	$2,788											
Subtotal Dismantling and Decon Costs per Well	$5,576.06	$5,576.06	$5,576.06											
C. Tubing String Disposal (NRC-Licensed Facility)														
Length of Tubing String (ft)	8,498	8,869	8,820											
Diameter of Tubing String (inches)	2.875	2.875	2.875											
Volume of Tubing String (ft^3)	383	400	397											
Transportation and Disposal Unit Cost ($/ft3)	$7.32	$7.32	$7.32											
Subtotal Tubing String Disposal Costs per Well	$2,804	$2,927	$2,911											
Subtotal Waste Disposal Well Abandonment Costs per Well	$133,766	$204,795	$137,877											
Total Waste Disposal Well Abandonment Costs	**$476,438**													
TOTAL WELL AND DRILL HOLE ABANDONMENT COSTS	**$9,418,436**													

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Wellfield Buildings and Equipment Removal and Disposal	A-Wellfield	B-Wellfield	C-Wellfield	C-22 Pattern	C Haul Drifts	D-Wellfield	D-Extension	E-Wellfield	F-Wellfield	H-Wellfield	I-Wellfield	J-Wellfield	J-Extension
I. Wellfield Piping				Inc in MU-C	Inc in MU-C								
Number of Header Houses per Wellfield	5	18	20	0	0	4	3	15	43	10	6	9	5
Approximate Length of Piping per Header House (ft)	13,800	13,800	13,800	13,800	13,800	13,800	13,800	13,800	13,800	13,800	13,800	13,800	13,800
*average 46 wells per with 300 ft pipeline/well)													
Approximate Total Length of Piping (ft)	69,000	248,400	276,000	0	0	55,200	41,400	207,000	593,400	138,000	82,800	124,200	69,000
A. Removal and Loading													
Wellfield Piping Removal Unit Cost ($/ft of pipe)	$1.86	$1.86	$1.86	$1.86	$1.86	$1.86	$1.86	$1.86	$1.86	$1.86	$1.86	$1.86	$1.86
Subtotal Wellfield Piping Removal and Loading Costs	$128,109	$461,192	$512,436	$0	$0	$102,487	$76,865	$384,327	$1,101,737	$256,218	$153,731	$230,596	$128,109
B. Transport and Disposal Costs (NRC-Licensed Facility)													
Average Diameter of Piping (inches)	2	2	2	2	2	2	2	2	2	2	2	2	2
Chipped Volume Reduction (ft3/ft)	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
Chipped Volume per Wellfield (ft^3)	740	2663	2959	0	0	592	444	2219	6362	1480	888	1332	740
Volume for Disposal Assuming 10% Void Space (ft^3)	814	2930	3255	0	0	651	488	2441	6998	1628	977	1465	814
Transportation and Disposal Unit Cost ($/ft3)	$5.77	$5.77	$5.77	$5.77	$5.77	$5.77	$5.77	$5.77	$5.77	$5.77	$5.77	$5.77	$5.77
Subtotal Wellfield Piping Transport and Disposal Costs	$4,697	$16,905	$18,781	$0	$0	$3,756	$2,816	$14,084	$40,377	$9,393	$5,637	$8,453	$4,697
Subtotal Wellfield Piping Costs per Wellfield	$132,806	$478,097	$531,217	$0	$0	$106,243	$79,681	$398,411	$1,142,114	$265,611	$159,368	$239,049	$132,806
Total Wellfield Piping Costs	**$3,665,403**												
II. Well Pumps and DownholeTubing													
Assumptions: Pump and tubing removal costs included under ground water restoration labor													
60% of production/injection wells contain pumps and/or tubing													
A. Pump and Tubing Transportation and Disposal				Inc in MU-C	Inc in MU-C		Inc in MU-D						
Number of Production Wells	0	133	204	0	0	91	0	145	549	169	136	123	56
Number of Injection Wells	1	194	261	0	0	143	0	234	794	288	239	242	112
Number of Monitor Wells	7	64	85	0	0	50	0	59	113	74	34	45	25
1. Pump Volume													
Number of Production Wells with Pumps	0	133	203.5	0	0	91	0	145	549	168.5	136	123	56
Pump Volume (ft^3)	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43
Pump Volume per Wellfield (ft^3)	0.0	57.6	88.1	0.0	0.0	39.4	0.0	62.8	237.8	73.0	58.9	53.3	24.3
2. Tubing Volume													
Average Tubing Length per Well (ft)	475	425	525	525	525	575	575	525	625	475	625	515	515
*Average tubing length/wellfield based on average well depth minus 25 ft													
Number of Production Wells with Tubing	0	80	122	0	0	55	0	87	329	101	82	74	34
Number of Injection Wells with Tubing	1	116	156	0	0	86	0	140	476	173	143	145	67
Tubing Length per Wellfield (ft)	3,800	110,500	190,575	0	0	109,825	0	150,150	573,750	165,300	161,875	135,960	64,890
Diameter of Production Well Fiberglass Tubing (inches)	2	2	2	2	2	2	2	2	2	2	2	2	2
Diameter of Injection Well HDPE Tubing (inches)	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25
Chipped Volume Reduction (ft^3/ft)	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
Chipped Volume per Wellfield (ft^3)	41	1185	2043	0	0	1177	0	1610	6151	1772	1736	1458	696
Volume of Pump and Tubing (ft^3)	41	1243	2131	0	0	1216	0	1673	6389	1845	1795	1511	720
Volume for Disposal Assuming Void Space (ft^3)	45	1367	2344	0	0	1338	0	1840	7028	2029	1974	1662	792
Transportation and Disposal Unit Cost ($/ft3)	$5.77	$5.77	$5.77	$5.77	$5.77	$5.77	$5.77	$5.77	$5.77	$5.77	$5.77	$5.77	$5.77
Subtotal Pump and Tubing Transport and Disposal Costs Per Wellfield	$260	$7,887	$13,524	$0	$0	$7,720	$0	$10,616	$40,550	$11,707	$11,390	$9,589	$4,570
Total Pump and DownholeTubing Costs	**$117,813**												
III. Buried Trunkline (Includes $ for fiber optic cable removal)													
Assumptions:		Inc in MU-A		Inc in MU-C	Inc in MU-C			Inc in MU-D					
Length of Trunkline Trench (ft)	6500	0	5900	0	0	12000	5500	0	11700	13200	10750	2500	2000
A. Removal and Loading													
Main Pipeline Removal Unit Cost ($/ft of trench)	$3.71	$3.71	$3.71	$3.71	$3.71	$3.71	$3.71	$3.71	$3.71	$3.71	$3.71	$3.71	$3.71
Subtotal Trunkline Removal and Loading Costs	$24,136	$0	$21,908	$0	$0	$44,560	$20,423	$0	$43,446	$49,016	$39,918	$9,283	$7,427
B. Transport and Disposal Costs (NRC-Licensed Facility)													
1. 3" HDPE Trunkline													
Piping Length (ft)	6500	0	5900	0	0	12000	5500	0	11700	13200	10750	0	0
Chipped Volume per Lft (ft3/ft)	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023
Chipped Volume (ft^3)	151	0	137	0	0	279	128	0	272	307	250	0	0
2. 6" HDPE Trunkline													
Piping Length (ft)	0	0	0	0	0	0	11000	0	0	0	3000	0	0
Chipped Volume per Lft (ft3/ft)	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083

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Wellfield Buildings and Equipment Removal and Disposal	A-Wellfield	B-Wellfield	C-Wellfield	C-22 Pattern	C Haul Drifts	D-Wellfield	D-Extension	E-Wellfield	F-Wellfield	H-Wellfield	I-Wellfield	J-Wellfield	J-Extension
Chipped Volume (ft^3)	0	0	0	0	0	0	917	0	0	0	250	0	0
3. 10" HDPE Trunkline													
Piping Length (ft)	13000	0	0	0	0	0	0	0	0	0	750	2000	1500
Chipped Volume per Lft (ft3/ft)	0.220	0.220	0.220	0.220	0.220	0.220	0.220	0.220	0.220	0.220	0.220	0.220	0.220
Chipped Volume (ft^3)	2854	0	0	0	0	0	0	0	0	0	165	439	329
4. 12" HDPE Trunkline													
Piping Length (ft)	0	0	11800	0	0	24000	0	0	0	0	0	2000	1500
Chipped Volume per Lft (ft3/ft)	0.309	0.309	0.309	0.309	0.309	0.309	0.309	0.309	0.309	0.309	0.309	0.309	0.309
Chipped Volume (ft^3)	0	0	3644	0	0	7411	0	0	0	0	0	618	463
5. 14" HDPE Trunkline													
Piping Length (ft)	0	0	0	0	0	0	0	0	23400	26400	8500	0	0
Chipped Volume per Lft (ft3/ft)	0.372	0.372	0.372	0.372	0.372	0.372	0.372	0.372	0.372	0.372	0.372	0.372	0.372
Chipped Volume (ft^3)	0	0	0	0	0	0	0	0	8712	9829	3165	0	0
6. 16" HDPE Trunkline													
Piping Length (ft)	0	0	0	0	0	0	0	0	23400	26400	8500	0	0
Chipped Volume per Lft (ft3/ft)	0.486	0.486	0.486	0.486	0.486	0.486	0.486	0.486	0.486	0.486	0.486	0.486	0.486
Chipped Volume (ft^3)	0	0	0	0	0	0	0	0	11381	12841	4134	0	0
Total Trunkline Chipped Volume (ft^3)	3006	0	3781	0	0	7691	1045	0	20366	22977	7964	1057	793
Volume for Disposal Assuming 10% Void Space (ft^3)	3306	0	4159	0	0	8460	1150	0	22403	25275	8761	1162	872
Transportation and Disposal Unit Cost ($/ft3)	$5.77	$5.77	$5.77	$5.77	$5.77	$5.77	$5.77	$5.77	$5.77	$5.77	$5.77	$5.77	$5.77
Subtotal Trunkline Transport and Disposal Costs	$19,075	$0	$23,996	$0	$0	$48,812	$6,635	$0	$129,260	$145,831	$50,549	$6,704	$5,031
Subtotal Trunkline Decommissioning Costs per Wellfield	$43,211	$0	$45,904	$0	$0	$93,372	$27,058	$0	$172,706	$194,847	$90,467	$15,987	$12,458
Total Trunkline Decommissioning Costs	**$696,010**												
IV. **Wellhead Cover Removal**				Inc in MU-C	Inc in MU-C								
Number of Production and Injection Wells	1	327	459	0	0	234	0	369	1163	451	365	347	168
Well Head Removal, Decontamination, and Disposal Cost	$11.74	$11.74	$11.74	$11.74	$11.74	$11.74	$11.74	$11.74	$11.74	$11.74	$11.74	$11.74	$11.74
Subtotal Wellhead Removal Costs	$12	$3,839	$5,388	$0	$0	$2,747	$0	$4,332	$13,653	$5,294	$4,285	$4,074	$1,972
Total Wellhead Cover Removal Costs	**$45,596**												
IV. **Header Houses** (Includes Booster Stations)				Inc in MU-C	Inc in MU-C								
Total Quantity	5	18	21	0	0	4	3	15	43	11	6	9	5
Average Header House Volume (ft^3)	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
A. Removal													
Total Volume (ft^3)	8000	28800	33600	0	0	6400	4800	24000	68800	17600	9600	14400	8000
Demolition Cost	$0.316	$0.316	$0.316	$0.316	$0.316	$0.316	$0.316	$0.316	$0.316	$0.316	$0.316	$0.316	$0.316
Subtotal Building Demolition Costs	$2,526	$9,092	$10,608	$0	$0	$2,020	$1,515	$7,577	$21,720	$5,556	$3,031	$4,546	$2,526
B. Survey and Decontamination													
Cost per Header House	$621	$621	$621	$621	$621	$621	$621	$621	$621	$621	$621	$621	$621
Subtotal Survey and Decontamination Costs	$3,107	$11,185	$13,049	$0	$0	$2,486	$1,864	$9,321	$26,720	$6,835	$3,728	$5,592	$3,107
C. Disposal													
Total Volume for Disposal - Incl. 33% Factor (cy)	98	352	411	0	0	78	59	293	841	215	117	176	98
Volume for Disposal Assuming Void Space (cy)	108	387	452	0	0	86	65	323	925	237	129	194	108
Disposal Cost, Landfill (cy)	$42.17	$42.17	$42.17	$42.17	$42.17	$42.17	$42.17	$42.17	$42.17	$42.17	$42.17	$42.17	$42.17
Subtotal County Landfill Disposal Costs	$4,554	$16,319	$19,059	$0	$0	$3,626	$2,741	$13,620	$39,004	$9,994	$5,440	$8,180	$4,554
Headerhouse Soil Removal Volume (assumes 10'Wx20'Lx2.5'D)	500	500	500	500	500	500	500	500	500	500	500	500	500
11e.(2) Disposal Cost (ft^3)	$5.80	$5.80	$5.80	$5.80	$5.80	$5.80	$5.80	$5.80	$5.80	$5.80	$5.80	$5.80	$5.80
Subtotal 11(e)2 Disposal Cost	$14,512	$52,243	$60,951	$0	$0	$11,610	$8,707	$43,536	$124,804	$31,926	$17,414	$26,122	$14,512
Subtotal Header House Removal and Disposal Costs per Wellfield	$24,699	$88,839	$103,667	$0	$0	$19,742	$14,827	$74,054	$212,248	$54,311	$29,613	$44,440	$24,699
Total Header House Removal and Disposal Costs	**$691,139**												
TOTAL REMOVAL AND DISPOSAL COSTS PER WELLFIELD	$200,988	$578,662	$699,700	$0	$0	$229,824	$121,566	$487,413	$1,581,271	$531,770	$295,123	$313,139	$176,505
TOTAL WELLFIELD BUILDINGS AND EQUIPMENT REMOVAL	**$5,215,961**												

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Wellfield and Satellite Surface Reclamation	Mine Unit-A/B	Mine Unit-C	Mine Unit-D	Mine Unit-E	Mine Unit-F	Mine Unit-H	D-Extension	Mine Unit-I	Mine Unit-J	J-Extension
I. Wellfield Pattern Area Reclamation										
Pattern Area (acres)	37.9	63.9	15.0	44.6	157.6	56.1	9.3	52.7	52.7	40.0
*Assumes wellfield pattern area X 2										
Discing/Seeding Unit Cost ($/acre)	$548	$548	$548	$548	$548	$548	$548	$548	$548	$548
Subtotal Pattern Area Reclamation Costs per Wellfield	$20,746	$35,007	$8,215	$24,437	$86,302	$30,746	$5,071	$28,840	$28,884	$21,907
Total Wellfield Pattern Area Reclamation Costs	**$290,155**									
II. Wellfield Road Reclamation										
Road Construction										
Length of Wellfield Roads (1000 ft)	12.8	11.3	2.4	13.3	18	15.7	5	5	5	5
Wellfield Road Reclamation Unit Cost ($/1000 ft)	$1,438	$1,438	$1,438	$1,438	$1,438	$1,438	$1,438	$1,438	$1,438	$1,438
Subtotal Wellfield Road Reclamation Costs	$18,402	$16,245	$3,450	$19,120	$25,877	$22,571	$7,188	$7,188	$7,188	$7,188
Total Wellfield Road Reclamation Costs	**$134,417**									
III. Laydown area reclamation										
Area of Disturbance (acres)	1	1	1	1	1	1	1	1	1	1
Average Depth of Stripped Topsoil (ft)	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67
Surface Grade: Level Ground										
Average Length of Topsoil Haul (ft)	500	500	500	500	500	500	500	500	500	500
A. Ripping Overburden with Dozer										
Ripping Cost (per acre)	$1,381	$1,381	$1,381	$1,381	$1,381	$1,381	$1,381	$1,381	$1,381	$1,381
Subtotal Ripping Costs	$1,381	$1,381	$1,381	$1,381	$1,381	$1,381	$1,381	$1,381	$1,381	$1,381
B. Topsoil Application with Scraper										
Volume of Topsoil Removed (cy)	1081	1081	1081	1081	1081	1081	1081	1081	1081	1081
Moving Materials (0% Grade)	$1.21	$1.21	$1.21	$1.21	$1.21	$1.21	$1.21	$1.21	$1.21	$1.21
Subtotal Topsoil Application Costs	$1,307	$1,307	$1,307	$1,307	$1,307	$1,307	$1,307	$1,307	$1,307	$1,307
C. Discing and Seeding										
Discing/Seeding Unit Cost ($/acre)	$548	$548	$548	$548	$548	$548	$548	$548	$548	$548
Subtotal Discing/Seeding Costs	$548	$548	$548	$548	$548	$548	$548	$548	$548	$548
Subtotal Surface Reclamation Costs per WF laydown area	$3,236	$3,236	$3,236	$3,236	$3,236	$3,236	$3,236	$3,236	$3,236	$3,236
Total Wellfield Laydown Area Reclamation Costs	**$32,360**									
IV. Fence Removal										
Length of Fencing (ft)	13,720	18,694	14,060	18,426	29,540	9,680	0	0	9,977	10,000
Fence Removal Costs	$0.43	$0.43	$0.43	$0.43	$0.43	$0.43	$0.43	$0.43	$0.43	$0.43
Subtotal Fence Removal Costs per Wellfield	$5,886	$8,020	$6,032	$7,905	$12,673	$4,153	$0	$0	$4,280	$4,290
Total Fence Removal Costs	**$53,238**									
SUBTOTAL SURFACE RECLAMATION COSTS PER WELLFIELD	**$48,270**	**$62,508**	**$20,933**	**$54,698**	**$128,088**	**$60,706**	**$15,495**	**$39,264**	**$43,588**	**$36,621**
TOTAL WELLFIELD SURFACE RECLAMATION COSTS	**$510,170**									

V. Satellite Area Reclamation	Satellite No.1	Satellite No.2	Satellite No.3	Se Plant
Assumptions:				
Area of Disturbance (acres)	1	3	2.5	2
Average Depth of Stripped Topsoil (ft)	1	0.67	0.67	0.67
Surface Grade: Level Ground				
Average Length of Topsoil Haul (ft)	1000	500	500	500
A. Ripping Overburden with Dozer				
Ripping Cost (per acre)	$1,381.27	$1,381.27	$1,381.27	$1,381.27
Subtotal Ripping Costs	$1,381.00	$4,144.00	$3,453	$2,763
B. Topsoil Application with Scraper				
Volume of Topsoil Removed (cy)	1613	3243	2702	2162
Moving Materials (0% Grade)	$1.44	$1.44	$1.44	$1.44
Subtotal Topsoil Application Costs	$2,330	$4,684	$3,903	$3,122
C. Discing and Seeding				
Discing/Seeding Unit Cost ($/acre)	$548	$548	$548	$548
Subtotal Discing/Seeding Costs	$548	$1,643	$1,369	$1,095
Subtotal Surface Reclamation Costs per Satellite	$4,259	$10,471	$8,725	$6,980
Total Satellite Building Area Reclamation Costs	**$30,435**			
TOTAL WELLFIELD & SATELLITE SURFACE RECLAMATION COSTS	**$540,605**			

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Equipment Removal and Loading	Central Plant	Satellite No. 1	Satellite No. 2	Satellite No. 3	Selenium Plant
I. Removal and Loading Costs					
A. Tankage					
Number of Tanks	39	8	14	18	7
Volume of Tank Construction Material (ft^3)	1629	162	290	397	290
Tank Removal Cost	$144.12	$144.12	$144.12	$144.12	$144.12
Subtotal Tankage Removal and Loading Costs	$234,773	$23,348	$41,795	$57,216	$41,795
B. PVC/Steel Pipe					
PVC Pipe Footage	12996	1000	4000	4000	4000
Average PVC Pipe Diameter (inches)	3	3	3	3	3
Shredded PVC Pipe Volume Reduction (ft3/ft)	0.023	0.023	0.023	0.023	0.023
Volume of Shredded PVC Pipe (ft^3)	303	23	93	93	93
Steel Pipe Footage	645	0	0	0	0
Average Steel Pipe Diameter (inches)	2	0	0	0	0
Volume (ft^3)	15	0	0	0	0
Pipe Removal Cost	$8.93	$8.93	$8.93	$8.93	$8.93
Subtotal PVC/Steel Pipe Labor & Equipment Costs	$121,803	$8,929	$35,717	$35,717	$35,717
C. Pumps					
Number of Pumps	52	10	14	13	14
Average Volume (ft^3/pump)	4.93	4.93	4.93	4.93	4.93
Volume of Pumps (ft^3)	256.36	49.3	69.02	64.09	69.02
Pump Removal Cost	$108.14	$108.14	$108.14	$108.14	$108.14
Subtotal Pump Removal and Loading Costs	$27,722	$5,331	$7,464	$6,930	$7,464
D. Dryer					
Dryer Volume (ft^3)	885	0	0	0	0
Dryer Removal Cost	$14.71	$14.71	$14.71	$14.71	$14.71
Subtotal Dryer Removal Costs	$13,017	$0	$0	$0	$0
E. RO and Degasser Units					
Number of RO Units (500 gpm)					
Current	0	0	2.5	0	0
Planned	0	0	0	0	0
Number of Degasser Units					
Current	0	0	0	0	1
Planned	0	0	0	0	0
RO/Degasser Average Volume (ft3/Unit)	250	250	250	250	250
RO and Degasser Removal Cost	$5.02	$5.02	$5.02	$5.02	$5.02
Subtotal RO Unit Removal and Loading Costs	$0	$0	$3,141	$0	$1,256
Subtotal Equipment Removal and Loading Costs per Facility	$397,315	$37,608	$88,116	$99,863	$86,231
Total Equipment Removal and Loading Costs	**$709,133**				

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Equipment Removal and Loading				Central Plant	Satellite No. 1	Satellite No. 2	Satellite No. 3	Selenium Plant
II.	**Transportation and Disposal Costs (NRC-Licensed Facility)**							
	A.	Tankage						
		Volume of Tank Construction Material (ft^3)		1629	162	290	397	290
		Volume for Disposal Assuming Void Space (ft^3)		1792	178	319	437	319
		Transportation and Disposal Unit Cost ($/ft3)		$7.32	$7.32	$7.32	$7.32	$7.32
		Subtotal Tankage Transportation and Disposal Costs		$13,124	$1,304	$2,336	$3,200	$2,336
	B.	PVC / Steel Pipe						
		Volume of Shredded PVC Pipe (ft^3)		303	23	93	93	93
		Volume for Disposal Assuming Void Space (ft^3)		333	25	102	102	102
		Volume of Steel Pipe (ft^3)		15	0	0	0	0
		Volume for Disposal Assuming Void Space (ft^3)		17	0	0	0	0
		Transportation and Disposal Unit Cost ($/ft3)		$5.77	$5.77	$5.77	$5.77	$5.77
		Subtotal PVC Pipe Transportation and Disposal Costs		$2,019	$144	$589	$589	$589
	C.	Pumps						
		Volume of Pumps (ft^3)		256.36	49.3	69.02	64.09	69.02
		Volume for Disposal Assuming Void Space (ft^3)		282	54	76	70	76
		Transportation and Disposal Unit Cost ($/ft3)		$7.32	$7.32	$7.32	$7.32	$7.32
		Subtotal Pump Transportation and Disposal Costs		$2,065	$395	$557	$513	$557
	D.	Dryer						
		Dryer Volume (ft^3)		885	0	0	0	0
		Volume for Disposal Assuming Dryer Remains Intact (ft^3)		885	0	0	0	0
		Transportation and Disposal Unit Cost ($/ft3)		$7.32	$7.32	$7.32	$7.32	$7.32
		Subotal Dryer Transportation and Disposal Costs		$6,481	$0	$0	$0	$0
	E.	RO/Degasser Units						
		Volume of RO/Degasser Units (ft^3)		0	0	625	0	250
		Volume for Disposal Assuming Volume Reduction (ft^3)		0	0	687.5	0	275
		Transportation and Disposal Unit Costs		$7.32	$7.32	$7.32	$7.32	$7.32
		Subtotal RO Unit Transportation and Disposal Costs		$0	$0	$5,035	$0	$2,014
	Subtotal Equipment Transportation and Disposal Costs per Facility			$23,689	$1,843	$8,517	$4,302	$5,496
	Total Equipment Transportation and Disposal Costs			**$43,847**				
III.	**Health and Safety Costs**							
		Radiation Safety Equipment	Accounted for on GW REST					
	Total Health and Safety Costs							
SUBTOTAL EQUIPMENT REMOVAL AND DISPOSAL COSTS PER FACILITY				$421,004	$39,451	$96,633	$104,165	$91,727
TOTAL EQUIPMENT REMOVAL AND DISPOSAL COSTS				**$752,980**				

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Building Demolition and Disposal	Central Plant	Dryer Building	Satellite No. 1	Satellite No. 2	Satellite No. 3	Sat. No. 3 Fab Shop	Yellowcake Warehouse	South Warehouse	Suspended Walkway	Changehouse and Lab	Process/ Fire Water	Potable Water Bldg
I. Decontamination Costs												
A. Wall Decontamination												
Area to be Decontaminated (ft^2)	131,000	20,000	0	0	0	0	0	0	0	0	0	0
HCl Acid Wash, including labor ($/ft2)	$0.94	$0.94	$0.94	$0.94	$0.94	$0.94	$0.94	$0.94	$0.94	$0.94	$0.94	$0.94
Subtotal Wall Decontamination Costs	$123,600	$18,870	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
B. Concrete Floor Decontamination												
Area to be Decontaminated (ft^2)	17,820	0	6,000	9,600	9,600	0	0	0	0	0	0	0
HCl Acid Wash, including labor ($/ft2)	$0.53	$0.53	$0.53	$0.53	$0.53	$0.53	$0.53	$0.53	$0.53	$0.53	$0.53	$0.53
Subtotal Concrete Floor Decontamination Costs	$9,358	$0	$3,151	$5,042	$5,042	$0	$0	$0	$0	$0	$0	$0
C. Deep Well Injection Costs												
Total kgals for Injection (1 gal used per ft2)	148.82	20	6	9.6	9.6	0	0	0	0	0	0	0
Deep Well Injection Unit Cost ($/kgals)	$1.13	$1.13	$1.13	$1.13	$1.13	$1.13	$1.13	$1.13	$1.13	$1.13	$1.13	$1.13
Subtotal Deep Well Injection Costs	$168	$23	$7	$11	$11	$0	$0	$0	$0	$0	$0	$0
Subtotal Decontamination Costs per Building	$133,126	$18,893	$3,158	$5,053	$5,053	$0	$0	$0	$0	$0	$0	$0
Total Decontamination Costs	**$176,103**											
II. Demolition Costs												
A. Building												
Height of Building (ft)	24	24	24	25	25	25	14	19	0	14	21	35
Volume of Building (ft^3)	794,000	30,720	192,000	320,000	320,000	37,560	91,000	333,000	5,600	73000	16,500	6,300
Demolition Cost	$0.316	$0.316	$0.316	$0.316	$0.316	$0.316	$0.316	$0.316	$0.316	$0.316	$0.316	$0.316
Subtotal Building Demolition Costs	$250,666	$9,698	$60,614	$101,024	$101,024	$11,858	$28,729	$105,128	$1,768	$23,046	$5,209	$1,989
B. Concrete Floor												
Area of Concrete Floor (ft^2)	23,760	500	8,000	12800	12800	0	6500	18000	0	5400	800	180
Demolition Cost	$6.03	$6.03	$6.03	$6.03	$6.03	$6.03	$6.03	$6.03	$6.03	$6.03	$6.03	$6.03
Subtotal Concrete Floor Demolition Costs	$143,225	$3,014	$48,224	$77,158	$77,158	$0	$39,182	$108,504	$0	$32,551	$4,822	$1,085
C. Concrete Footing												
Length of Concrete Footing (ft)	617	89	358	453	453	0	322	537	0	294	113	54
Demolition Cost	$22.23	$22.23	$22.23	$22.23	$22.23	$22.23	$22.23	$22.23	$22.23	$22.23	$22.23	$22.23
Subtotal Concrete Footing Demolition Costs	$13,707	$1,988	$7,954	$10,061	$10,061	$0	$7,169	$11,930	$0	$6,535	$2,515	$1,193
Subtotal Demolition Costs per Building	$407,598	$14,700	$116,792	$188,243	$188,243	$11,858	$75,080	$225,562	$1,768	$62,132	$12,546	$4,267
Total Demolition Costs	**$1,598,519**											
III. Disposal Costs												
A. Building												
Volume of Building (cy)	29407	1138	7111	11852	11852	1391	3370	12333	207	2704	611	233
Off-Site County Landfill												
Percentage (%)	100	100	100	100	100	100	100	100	100	100	100	100
Total Volume for Disposal - Incl. 33% Factor (cy)	9704	375	2347	3911	3911	459	1112	4070	68	892	202	77
Disposal Cost, Landfill (cy)	$42.17	$42.17	$42.17	$42.17	$42.17	$42.17	$42.17	$42.17	$42.17	$42.17	$42.17	$42.17
Subtotal County Facility Off-Site Disposal Costs	$409,204	$15,832	$98,951	$164,919	$164,919	$19,357	$46,899	$171,618	$2,886	$37,622	$8,504	$3,247
B. Concrete Floor												
Area of Concrete Floor (ft^2)	23760	500	8000	12800	12800	1500	6500	18000	1186	3000	800	180
Average Thickness of Concrete Floor (ft)	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
Volume of Concrete Floor (ft^3)	17820	375	6000	9600	9600	1125	4875	13500	889.5	2250	600	135
Volume of Concrete Floor (cy)	660	14	222	356	356	42	181	500	33	83	22	5
1. On-Site Concrete Disposal												
Percentage (%)	75	75	75	100	100	100	100	100	100	100	100	100

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Building Demolition and Disposal	Central Plant	Dryer Building	Satellite No. 1	Satellite No. 2	Satellite No. 3	Sat. No. 3 Fab Shop	Yellowcake Warehouse	South Warehouse	Suspended Walkway	Changehouse and Lab	Process/ Fire Water	Potable Water Bldg
Volume for Disposal (cy)	495	10	167	356	356	42	181	500	33	83	633	5
Concrete Disposal On Site (cy)	$9.12	$9.12	$9.12	$9.12	$9.12	$9.12	$9.12	$9.12	$9.12	$9.12	$9.12	$9.12
Subtotal County Facility Off-Site Disposal Costs	$4,514	$95	$1,520	$3,242	$3,242	$380	$1,646	$4,560	$300	$760	$5,775	$46
2. NRC-Licensed Facility												
Percentage (%)	25	25	25	0	0	0	0	0	0	0	0	0
Volume for Disposal (ft^3)	4455	94	1500	0	0	0	0	0	0	0	0	0
Transportation and Disposal Unit Cost ($/$ft^3$)	$7.32	$7.32	$7.32	$7.32	$7.32	$7.32	$7.32	$7.32	$7.32	$7.32	$7.32	$7.32
Subtotal NRC-Licensed Facility Disposal Costs	$32,626	$687	$10,985	$0	$0	$0	$0	$0	$0	$0	$0	$0
Subtotal Concrete Floor Disposal Costs	$37,140	$782	$12,505	$3,242	$3,242	$380	$1,646	$4,560	$300	$760	$5,775	$46
C. Concrete Footing												
Length of Concrete Footing (ft)	617	89	358	453	453	0	322	537	124	294	113	54
Average Depth of Concrete Footing (ft)	4	4	4	4	4	4	4	4	4	4	4	4
Average Width of Concrete Footing (ft)	1	1	1	1	1	1	1	1	1	1	1	1
Volume of Concrete Footing (ft^3)	2466	358	1431	1810	1810	0	1290	2147	496	1176	453	215
Volume of Concrete Footing (cy)	91	13	53	67	67	0	48	80	18	44	17	8
Concrete Disposal On Site (cy)	$9.12	$9.12	$9.12	$9.12	$9.12	$9.12	$9.12	$9.12	$9.12	$9.12	$9.12	$9.12
Subtotal Concrete Footing Disposal Costs	$833	$121	$483	$611	$611	$0	$436	$725	$168	$397	$153	$73
Subtotal Disposal Costs per Building	$447,177	$16,735	$111,939	$168,772	$168,772	$19,737	$48,981	$176,903	$3,354	$38,779	$14,432	$3,366
Total Disposal Costs	**$1,414,935**											
IV. Health and Safety Costs Accounted for on GW REST												
SUBTOTAL BUILDING DEMOLITION AND DISPOSAL COSTS	$987,901	$50,328	$231,889	$362,068	$362,068	$31,595	$124,061	$402,465	$5,122	$100,911	$26,978	$7,633
TOTAL BUILDING DEMOLITION AND DISPOSAL COSTS	**$3,189,557**											

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Building Demolition and Disposal	Potable Water Tank Slab	Central Plant Tank Slabs	Selenium Plant	SRHUP #9 DDW	Vollman 33-27 DDW	Morton 1-20 DDW
I. Decontamination Costs						
A. Wall Decontamination						
Area to be Decontaminated (ft^2)	0	0	4,000	0	0	0
HCl Acid Wash, including labor ($/ft2)	$0.94	$0.94	$0.94	$0.94	$0.94	$0.94
Subtotal Wall Decontamination Costs	$0	$0	$3,774	$0	$0	$0
B. Concrete Floor Decontamination						
Area to be Decontaminated (ft^2)	0	0	9,600	1260	1260	1260
HCl Acid Wash, including labor ($/ft2)	$0.53	$0.53	$0.53	$0.53	$0.53	$0.53
Subtotal Concrete Floor Decontamination Costs	$0	$0	$5,042	$662	$662	$662
C. Deep Well Injection Costs						
Total kgals for Injection (1 gal used per ft2)	0	0	13.6	1.26	1.26	1.26
Deep Well Injection Unit Cost ($/kgals)	$1.13	$1.13	$1.13	$1.13	$1.13	$1.13
Subtotal Deep Well Injection Costs	$0	$0	$15	$1	$1	$1
Subtotal Decontamination Costs per Building	$0	$0	$8,831	$663	$663	$663
Total Decontamination Costs						
II. Demolition Costs						
A. Building						
Height of Building (ft)	0	0	25	12	12	12
Volume of Building (ft^3)	0	0	320,000	15120	15120	15120
Demolition Cost	$0.316	$0.316	$0.316	$0.316	$0.316	$0.316
Subtotal Building Demolition Costs	$0	$0	$101,024	$4,773	$4,773	$4,773
B. Concrete Floor						
Area of Concrete Floor (ft^2)	1256	7854	12800	1260	1260	1260
Demolition Cost	$6.03	$6.03	$6.03	$6.03	$6.03	$6.03
Subtotal Concrete Floor Demolition Costs	$7,571	$47,344	$77,158	$7,595	$7,595	$7,595
C. Concrete Footing						
Length of Concrete Footing (ft)	0	0	453	142	142	142
Demolition Cost	$22.23	$22.23	$22.23	$22.23	$22.23	$22.23
Subtotal Concrete Footing Demolition Costs	$0	$0	$10,061	$3,156	$3,156	$3,156
Subtotal Demolition Costs per Building	$7,571	$47,344	$188,243	$15,524	$15,524	$15,524
Total Demolition Costs						
III. Disposal Costs						
A. Building						
Volume of Building (cy)	0	0	11852	560	560	560
Off-Site County Landfill						
Percentage (%)	100	100	100	100	100	100
Total Volume for Disposal - Incl. 33% Factor (cy)	0	0	3911	185	185	185
Disposal Cost, Landfill (cy)	$42.17	$42.17	$42.17	$42.17	$42.17	$42.17
Subtotal County Facility Off-Site Disposal Costs	$0	$0	$164,919	$7,792	$7,792	$7,792
B. Concrete Floor						
Area of Concrete Floor (ft^2)	1256	7854	12800	1260	1260	1260
Average Thickness of Concrete Floor (ft)	0.75	0.75	0.75	0.75	0.75	0.75
Volume of Concrete Floor (ft^3)	942	5890.5	9600	945	945	945
Volume of Concrete Floor (cy)	35	218	356	35	35	35
1. On-Site Concrete Disposal						
Percentage (%)	100	100	100	100	100	100

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Building Demolition and Disposal	Potable Water Tank Slab	Central Plant Tank Slabs	Selenium Plant	SRHUP #9 DDW	Vollman 33-27 DDW	Morton 1-20 DDW
Volume for Disposal (cy)	35	218	356	35	35	35
Concrete Disposal On Site (cy)	$9.12	$9.12	$9.12	$9.12	$9.12	$9.12
Subtotal County Facility Off-Site Disposal Costs	$318	$1,989	$3,242	$319	$319	$319
2. NRC-Licensed Facility						
Percentage (%)	0	0	0	0	0	0
Volume for Disposal (ft^3)	0	0	0	0	0	0
Transportation and Disposal Unit Cost ($/$ft^3$)	$7.32	$7.32	$7.32	$7.32	$7.32	$7.32
Subtotal NRC-Licensed Facility Disposal Costs	$0	$0	$0	$0	$0	$0
Subtotal Concrete Floor Disposal Costs	$318	$1,989	$3,242	$319	$319	$319
C. Concrete Footing						
Length of Concrete Footing (ft)	0	0	453	142	142	142
Average Depth of Concrete Footing (ft)	4	4	4	4	4	4
Average Width of Concrete Footing (ft)	1	1	1	1	1	1
Volume of Concrete Footing (ft^3)	0	0	1810	568	568	568
Volume of Concrete Footing (cy)	0	0	67	21	21	21
Concrete Disposal On Site (cy)	$9.12	$9.12	$9.12	$9.12	$9.12	$9.12
Subtotal Concrete Footing Disposal Costs	$0	$0	$611	$192	$192	$192
Subtotal Disposal Costs per Building	$318	$1,989	$168,772	$8,303	$8,303	$8,303
Total Disposal Costs						
IV. Health and Safety Costs Accounted for on GW REST						
SUBTOTAL BUILDING DEMOLITION AND DISPOSAL COSTS	$7,889	$49,333	$365,846	$24,490	$24,490	$24,490
TOTAL BUILDING DEMOLITION AND DISPOSAL COSTS						

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Miscellaneous Reclamation													
I.	**CPF/Office Area Reclamation**												
		Concrete Pad= 0.3 acres											
		Total Area = 10 acres											
	A.	Asphalt											
		Area of Asphalt (acres)	3.4										
		Ripping Cost (per acre)	$969.29										
		Average Thickness (ft)	0.50										
		Moving Materials (0% Grade)	$1.209										
		Volume of Asphalt (cy)	2,743										
		Disposal Cost	$42.17										
		Subtotal Asphalt Ripping and Disposal Costs	$130,525										
	B.	Ripping Overburden with Dozer											
		Overburden Surface Area (acres)	10.6										
		Ripping Cost (per acre)	$1,381.27										
		Subtotal Ripping Overburden Costs	$14,600										
	C.	Topsoil Application											
		Area of surface disturbance (ft^2)	130680										
		Average thickness of topsoil (ft)	0.5										
		Average haul distance (ft)	2000										
		Surface grade (%)	0%										
		Volume of Topsoil (cy)	2,420										
		Moving Materials (0% Grade)	$1.87										
		Subtotal Topsoil Application Costs	$4,528										
	D.	Discing/Seeding											
		Surface Area (acres)	13										
		Discing/Seeding Unit Cost ($/acre)	$548										
		Subtotal Discing/Seeding Costs	$7,120										
Total CPP/Office/Yard Area Reclamation			**$156,773**										

II.	**Access Road Reclamation (includes culverts)**		**CPP/Office Area**	**Sat No. 1**	**Sat No. 3**	**Connecting Road**	**Sat No. 2 to Rancher Rd**						
	A.	Assumptions											
		Surface grade	5%	0%	0%	0%	0%						
		Length of Road (ft)	13200	15840	5280	10560	2640						
		Width of Road (ft)	25	30	30	30	10						
		Area of road (acres)	7.6	10.9	3.6	7.3	0.6						
	B.	Ripping and Hauling Asphalt											
		Assumptions											
		Average Haul Distance (feet)	5500	0	0	0	0.0						
		Average Thickness of Asphalt (ft)	0.5	0.5	0.5	0.5	0.5						
		Ripping Cost (per acre)	$969.29	$969.29	$969.29	$969.29	$969.29						
		Volume of Asphalt (cy)	6111	8800	2933	5867	489						
		Moving Materials (0% Grade)	$1.87	$1.87	$1.87	$1.87	$1.87						
		Subtotal Ripping and Hauling Asphalt	$18,777.58	$27,039.72	$9,013.24	$18,026.48	$1,502.21						
	C.	Gravel Road Base Removal											
		Average haul distance (ft)	0	1000	1000	1000	0						
		Gravel Road Base Width (ft)	0	14	14	14	0						
		Gravel Road Base Area (acres)	0.00	5.09	1.70	3.39	0.00						
		Average Road Base Depth (ft)	0	0.5	0.5	0.5	0						
		Volume of Road Base (cy)	0	4107	1369	2738	0						
		Moving Materials (0% Grade)	$1.44	$1.44	$1.44	$1.44	$1.44						
		Subtotal Gravel Road Base Removal Costs	$0	$5,931	$1,977	$3,954	$0						
	D.	Ripping Overburden with Dozer											
		Overburden Surface Area (acres)	0.0	10.9	3.6	7.3	0.6						
		Ripping Cost (per acre)	$1,381.27	$1,381.27	$1,381.27	$1,381.27	$1,381.27						
		Subtotal Ripping Overburden Costs	$0	$15,068	$5,023	$10,046	$837						
	E.	Topsoil Application											
		Average haul distance (ft)	1500	5000	1500	1500	1500						

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Miscellaneous Reclamation													
		Topsoil Surface Area (ft^2)	330000	475200	158400	316800	26400						
		Depth of Topsoil (ft)	0	0	0	0	0						
		Volume of Topsoil (cy)	0	0	0	0	0						
		Moving Materials (0% Grade)	$1.44	$1.44	$1.44	$1.44	$1.44						
		Subtotal Topsoil Application Costs	$0	$0	$0	$0	$0						
	F.	Discing/Seeding											
		Surface Area (acres)	7.6	10.9	3.6	7.3	0.6						
		Discing/Seeding Unit Cost ($/acre)	$548	$548	$548	$548	$548						
		Subtotal Discing/Seeding Costs	$4,149	$5,975	$1,992	$3,983	$332						
		Multiplier for Projected Additions	0	0	0	0	0						
		Subtotal Reclamation Costs per Access Road	$22,927	$54,014	$18,005	$36,009	$2,671						
Total Access Road Reclamation Costs			**$133,626**										
III.		**Waste Water Pipeline Reclamation**	**SAT2 to SAT1 / Morton 1-20 WW Pipeline**	**SAT3 to SAT2 PSR**	**H-WF Rest. Bypass**	**Vollman WW Pipeline**	**SRHUP 9 WW Pipeline**	**SAT3 to SAT2**	**HUP to SR DDW Pipeline**	**Pipeline to Irrigator 1**	**SAT2 to PSR2**		
		Length of Trench (ft)	24000	22000	2200	13000	4000	10950	9700	24000	5600		
	A.	Removal and Loading											
		Main Pipeline Removal Unit Cost ($/ft of trench)	$3.71	$3.71	$3.71	$3.71	$3.71	$3.71	$3.71	$3.71	$3.71		
		Subtotal Trunkline Removal and Loading Costs	$89,119	$81,693	$8,169	$48,273	$14,853	$40,661	$36,019	$89,119	$20,794		
	B.	Transport and Disposal Costs (NRC-Licensed Facility)											
		1. 3" HDPE Trunkline											
		Piping Length (ft)	24000	0	2200	0	4000	0	0	0	0		
		Chipped Volume Reduction (ft3/ft)	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023		
		Chipped Volume (ft^3)	559	0	51	0	93	0	0	0	0		
		2. 4" HDPE Trunkline											
		Piping Length (ft)	0	22000	0	13000	0	0	0	6000	0		
		Chipped Volume Reduction (ft3/ft)	0.038	0.038	0.038	0.038	0.038	0.038	0.038	0.038	0.038		
		Chipped Volume (ft^3)	0	846	0	500	0	0	0	231	0		
		3. 6" HDPE Trunkline											
		Piping Length (ft)	0	0	0	0	0	10950	9700	0	3500		
		Chipped Volume Reduction (ft3/ft)	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083		
		Chipped Volume (ft^3)	0	0	0	0	0	913	809	0	292		
		4. 8" HDPE Trunkline											
		Piping Length (ft)	0	0	0	0	0	0	0	24000	0		
		Chipped Volume Recution (ft3/ft)	0.141	0.141	0.141	0.141	0.141	0.141	0.141	0.141	0.141		
		Chipped Volume	0	0	0	0	0	0	0	3391	0		
		Total Pipeline Disposal Volume	559	846	51	500	93	913	809	3622	292		
		Volume for Disposal Assuming Void Space (ft^3)	615	931	56	550	102	1004	890	3984	321		
		Transportation and Disposal Unit Cost (NRC-Licensed Facility) ($/ft3)	$5.77	$5.77	$5.77	$5.77	$5.77	$5.77	$5.77	$5.77	$5.77		
		Subtotal Transport and Disposal Costs	$3,548	$5,372	$323	$3,173	$589	$5,793	$5,135	$22,987	$1,852		
	C.	Discing/Seeding											
		Width of Pipeline Trench (ft)	10	10	8	8	8	8	8	8	8		
		Area of Pipeline Trench (acres)	5.5	5.1	0.4	2.4	0.7	2.0	1.8	4.4	1.0		
		Discing/Seeding Unit Cost ($/acre)	$548	$548	$548	$548	$548	$548	$548	$548	$548		
		Subtotal Discing/Seeding Costs	$3,017	$2,766	$221	$1,308	$402	$1,101	$976	$2,414	$563		
		Subtotal Reclamation Costs per Pipeline	$95,684	$89,831	$8,713	$52,754	$15,844	$47,555	$42,130	$114,520	$23,209		
Total Pipeline Reclamation Costs			**$490,240**										
IV.		**Radium Settling Basin Reclamation**	**E. Radium Pond**	**W. Radium Pond**									
		*Cost estimates based on planned expenditures (June 2013)											
	A.	Soil Sampling and Monitoring	$0	$0									
		*Soil Sampling and Characterization were Complete in 2011.											
	B.	Task Training and Access Control	$3,657	$3,657									
	C.	Subsoil Removal and Loading	$15,687	$15,687									
	D.	Site Backfill	$14,334	$14,334									
	E.	Revegetation	$6,318	$6,318									
	F.	Transportation & Disposal to 11e.(2) Facility											

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Miscellaneous Reclamation					
		Volume of Subsoil for Disposal (cy)	242.5	242.5	
		Transportation and Disposal Unit Cost ($/cy)	$156.73	$156.73	
		Subtotal Byproduct Material Transportation & Disposal Costs	$38,007	$38,007	
	Subtotal Radium Pond Reclamation		$78,002	$78,003	
Total Settling Basin/Ponds Reclamation Costs			**$156,005**		
V.	**Purge Storage Reservoir Reclamation**		**PSR-1**	**PSR-2**	
	A.	Soil Sampling and Monitoring			
		Number of Soil Samples	10	10	
		$/Sample	$255	$255	
		Subtotal Soil Sampling and Monitoring Costs	$2,550	$2,550	
	B.	Leachate Collection System Removal Costs	$5,000	$0	
	C.	Topsoil/Subsoil Application			
		Assumptions:			
		Average haul distance (ft)	1000	150	
		Surface grade (%)	0	0	
		Volume of Topsoil/Subsoil (cy)	83000	74000	
		Topsoil/Subsoil Unit Cost per WDEQ Guideline No.12, App.C ($/cy)	$1.444	$0.00	
		Topsoil/Subsoil Unit Cost per WDEQ Guideline No.12, App.E ($/cy)	$0.00	$0.386	
		Subtotal Topsoil/Subsoil Application Costs per Reservoir	$119,877	$28,571	
	D.	Discing/Seeding			
		Surface Area (acres)	6	32	
		Discing/Seeding Unit Cost ($/acre)	$548	$548	
		Subtotal Discing/Seeding Costs	$3,286	$17,525	
	E.	Well Abandonment			
		Number of Wells	5	16	
		Average Depth (ft)	60	100	
		Abandonment Cost	$2.75	$2.75	
		Small Site Grading and Seeding (<1000 sq. feet)	$55	$55	
		Remove and Dispose Casing (top few feet)	$33	$33	
		Monitoring Well Concrete Pedestal Disposal	$110	$110	
		Subtotal Well Abandonment Cost	$1,815	$7,568	
	Subtotal Reclamation Costs per Reservoir		$132,528	$56,214	
	Total Purge Storage Reservoir Reclamation Costs		**$188,742**		
VI.	**Irrigation Area Reclamation**		**Irrigator No. 1A**	**Irrigator No. 2**	
	A.	Irrigation Equipment Removal Costs	$2,000	$2,000	
	B.	Plowing			
		Assumptions:			
		Plowing Unit Cost ($/acre)	$100	$100	
		Irrigation Area (acres)	55	106	
		Number of Cultivations	2	2	
		Subtotal Plowing Costs	$11,000	$21,200	
	C.	Discing/Seeding			
		Discing/Seeding Unit Cost ($/acre)	$548	$548	
		Subtotal Discing/Seeding Costs	$30,122	$58,053	
	Subtotal Reclamation Costs per Irrigation Area		$43,122	$81,253	
	Total Irrigation Area Reclamation Costs		**$124,375**		
VII.	**Potential Subsoil Mitigation for Purge Storage Reservoirs**		**PSR-1**	**PSR-2**	
	A.	Subsoil Removal and Loading			
		Surface Area (acres)	6	32	
		Depth (inches)	6	6	
		Volume for Removal (cy)	4,840	25,813	
		Liner and Subsoil Removal Cost	$5.12	$5.12	
		Subtotal Removal and Loading	$24,763	$132,071	
	B.	Subsoil Transportation and Disposal to 11e.(2) Facility			
		Disposal Cost	$156.73	$156.73	
		Subtotal Disposal Cost	$758,573	$4,045,724	
	Subtotal Reclamation Costs per Reservoir		$783,336	$4,177,795	
	Total Purge Storage Reservoir Mitigation Costs		**$4,961,131**		

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Miscellaneous Reclamation				
VIII.	**Revegetation of Exxon Reclaimed Lands**			
	Surface Area (acres)	217		
	Assumptions:			
	10% Reseeding potential areas of erosion ($/acre)	$548		
	Total Exxon Reclaimed Lands Revegetation Costs	**$11,884**		
IX.	**Potential Ground Water Mitigation for Casing Leak Investigation and PSR-2**			
A.	CLI Investigation Costs	$891,067	*Based on planned expenditures (June 2013)	
B.	Ground Water Pump and Treat Costs			
	Area (ft2)	1,000,000	*Includes PSR-2, C-North and E-Wellfield Areas	
	Sand Thickness (ft)	20		
	Porosity (%)	27%		
	Affected ground water (kgal)	40,392		
	Wellfield Pumping Cost	$0.20		
	Reverse Osmosis Unit Cost ($/kgal)	$0.62		
	Bleed to Deep Disposal Well (%)	25%		
	Brine Volume for Disposal	10,098		
	DDW Disposal Cost($/kgal)	$1.13		
	Permeate Volume for Re-Use	30,294		
	Satellite Pumping Cost ($/kgal)	$0.72		
	Subtotal Ground Water Pump and Treat Costs	$66,064		
C.	Well Abandonment (CLI Shallow Wells)			
	# of Monitoring Wells (Current)	151		
	Average Well Depth (ft)	156		
	# of Monitoring Wells (Planned)	21		
	Average Well Depth (ft)	250		
	Total Well Depth (ft)	28,806		
	Well Abandonment ($/ft)	2.75		
	Small Site Grading and Seeding ($/site)	55		
	Remove and Dispose Casing ($/well)	33		
	Concrete Pedestal Disposal ($/each)	110		
	Subtotal Well Abandonment Costs	$113,273		
	Total CLI and PSR-2 Ground Water Mitigation Costs	**$1,070,404**		
TOTAL MISCELLANEOUS RECLAMATION COSTS		**$7,293,180**		

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	A-Wellfield	B-Wellfield	C-Wellfield	C-22 Pattern	C Haul Drifts	D-Wellfield	D-Extension	E-Wellfield	F-Wellfield	H-Wellfield	I-Wellfield	J-Wellfield	J-Extension
Pore Volume Calculations													
Flare Factor	4.13	4.13	2.46	2	0	2.88	2.78	2.9	2.1	2.3	1.83	1.92	1.92
Wellfield Area (ft2)	148,600	676,550	1,067,056	325,000	0	326,750	201,509	971,941	3,431,990	1,222,583	1,146,959	1,148,680	871,200
Wellfield Area (acres)	3.41	15.53	24.50	7.46	0.00	7.50	4.63	22.31	78.79	28.07	26.33	26.37	20.00
Affected Ore Zone Area (ft2)	148,600	676,550	1,067,056	325,000	0	326,750	201,509	971,941	3,431,990	1,222,583	1,146,959	1,148,680	871,200
Avg. Completed Thickness	15.0	15.0	16.0	15.0	0.0	17.0	17.0	16.0	16.0	16.0	20.0	15.0	15.0
Porosity	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27
Affected Volume (ft3)	9,205,770	41,912,273	41,999,324	9,750,000	0	15,997,680	9,523,315	45,098,062	115,314,864	44,991,054	41,978,699	33,081,984	25,090,560
Kgallons per Pore Volume	18,592	84,646	84,822	19,691	0	32,309	19,233	91,080	232,890	90,864	84,780	66,812	50,673
Restoration Schedule (Based on Annual Water Balance/Schedule Update)													
Pre-Restoration Period (yrs)	0	0	0	0	0	0	0	0	7	0	0	8	8
Restoration Period (yrs)	0	0	1	1	1	1	1	4	13	7	6	8	5
Stability Period (yrs)	0	0	1	1	1	1	1	1	1	1	1	1	1
Total # of Years	0	0	2	2	2	2	2	5	21	8	7	17	14
End of Restoration (yrs)	20												
End of Stability (yrs)	21												
Number of Header Houses per Wellfield													
Current	5	18	20	0	0	4	3	15	43	10	6	9	0
Planned	0	0	0	0	0	0	0	0	0	0	0	0	5
Total Estimated	5	18	20	0	0	4	3	15	43	10	6	9	5
Average Header House Volume (ft3)	1600												
Number of Wells (In Service) per Wellfield													
Production Wells (P)				Inc in MU-C	Inc in MU-C		Inc in MU-D						
Current	0	133	201	0	0	91	0	140	459	166	131	114	0
Planned	0	0	0	0	0	0	0	0	0	0	0	0	56
Total Estimated	0	133	201	0	0	91	0	140	459	166	131	114	56
Injection Wells (I)													
Current	1	194	258	0	0	143	0	229	704	285	234	233	0
Planned	0	0	0	0	0	0	0	0	0	0	0	0	112
Total Estimated	1	194	258	0	0	143	0	229	704	285	234	233	112
Restoration Wells (R)													
Current	0	0	18	0	0	0	0	0	14	0	0	0	0
Planned	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Estimated	0	0	18	0	0	0	0	0	14	0	0	0	0
Monitor Wells (M, MO, MU, etc.)													
Current	7	64	85	0	0	50	0	59	113	74	34	45	0
Planned	0	0	0	0	0	0	0	0	0	0	0	0	25
Total Estimated	7	64	85	0	0	50	0	59	113	74	34	45	25
Other Wells (Pumping Wells, etc.)													
Current	0	1	0	0	0	4	0	0	0	4	2	0	0
Planned	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Estimated	0	1	0	0	0	4	0	0	0	4	2	0	0
Wellfield Refurbishment (I or P)													
Planned	0	0	5	0	0	0	0	10	180	5	10	18	0
Number of Wells per Wellfield	8	392	567	0	0	288	0	438	1470	534	411	410	193
Total Number of In Service Wells	4711												
Well Completion Details													
Average Well Depth (ft)	500	450	550	550	550	600	600	550	650	500	650	540	540
Average Diameter of Casing (inches)	5	5	5	5	5	5	5	5	5	5	5	5	5
Wellfield Fencing													
Length of Fencing (ft)	0	13720	18694	0	0	14060	0	18426	29540	9680	0	9977	10000

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Labor Costs		**Rate ($)**	**Net Benefits***	**Units**	**Source**
Environmental Manager/RSO		$46.00	$64.40	hour	MSEC**
Restoration Manager		$40.00	$56.00	hour	MSEC
Environmental Tech/HPT		$25.00	$35.00	hour	MSEC
Operator/Laborer		$26.00	$36.40	hour	MSEC
Maintenance Tech		$23.00	$32.20	hour	MSEC
*Includes additional 40% net benefits based on InfoMine USA cost data for Surface Metal and Industrial Mineral Mines - Western U.S. (Table 5)					
**Mountain States Employers Council, 2012 Survey, Mining Industry Compensation & Benefits					
Utility Costs		**Rate ($)**	**Profit & Overhead**	**Units**	**Source**
Electrical Costs		$0.0648	included	kWhr	Actual Costs-2013
Kilowatt to Horsepower		0.746	included	Kw/HP	N/A
Efficiency - Downhole Pumps		80%	included	Percent	N/A
Efficiency - Surface Pumps		90%	included	Percent	N/A
Natural Gas - Satellite No. 2/Selenium Treatment Plant		$18,088.78	included	year	Actual Costs-2013
Propane - Satellite No. 2/Selenium Treatment Plant		$1,011.27	included	year	Actual Costs-2013
Propane - Satellite No. 3		$43,188.29	included	year	Actual Costs-2013
Chemical & Material Costs		**Rate ($)**	**Profit & Overhead**	**Units**	**Source**
Antiscalant for RO (Hypersperse)		$3.9050	included	pound	Actual Costs-2013
Antiscalant for RO (ScaleTrol)		$4.5177	included	pound	Actual Costs-2013
Sodium Tripolyphosphate		$1.0893	included	pound	Actual Costs-2013
EDTA Tetrasodium Dihydrate		$1.8774	included	pound	Actual Costs-2013
Sodium Sulfide		$0.5520	included	pound	Quote-2013
Hydrochloric Acid		$0.1992	included	pound	Actual Costs-2013
Barium Chloride		$0.7970	included	pound	Actual Costs-2013
Iron Aggregate		$0.5516	included	pound	Actual Costs-2013
Silica Sand		$0.1407	included	pound	Actual Costs-2011
Pea Gravel		$0.0190	included	pound	Actual Costs-2013
Analytical Costs		**Rate ($)**	**Profit & Overhead**	**Units**	**Source***
Modified Guideline 8		$249.00	included	analysis	Quote: 2012-13
Excursion Parameters (UCL)		$30.00	included	analysis	Fee Schedule-2013
Restoration Progress Parameters (UCL + U + Se)		$50.00	included	analysis	Fee Schedule-2013
Irrigator Fluid		$245.00	included	analysis	Actual Costs-2012
Irrigator Vegetation		$270.00	included	analysis	Actual Costs-2012
Irrigator Soil		$255.00	included	analysis	Actual Costs-2012
Irrigator Soil Water		$150.00	included	analysis	Fee Schedule-2013
Other (Radon, Bioassay, etc.)		$1,000.00	$1,100.00	month	Cost Estimate
*All quotes, fee schedules and actual costs based on Energy Laboratories, Inc., Casper, WY					
Equipment Costs		**Rate ($)**	**Profit & Overhead***	**Units**	**Source**
Bandit 1290XP Trailer Mounted Brush Chipper		$47.93	$52.72	hour	Equipment Watch**
Bobcat S250 Skid Steer Loader		$36.57	$40.23	hour	Equipment Watch
Cat 320C L Trackhoe - 1.25 cu yd bucket		$100.03	$110.03	hour	Equipment Watch
Cat 416E Backhoe		$34.97	$38.47	hour	Equipment Watch
Cat 924H Loader - 2.4 cu yd bucket		$52.93	$58.22	hour	Equipment Watch
Concrete Jaws Labounty - CP-60		$18.51	$20.36	hour	Equipment Watch
GEHL DL-8 Rough Terrain Lift Truck		$56.44	$62.08	hour	Equipment Watch
Manlift (JLG 600S)		$47.54	$52.29	hour	Equipment Watch
MIT Unit		$30.09	$33.10	hour	Equipment Watch
Pick-up Truck 3/4 ton 4X4		$20.13	$22.14	hour	Equipment Watch
Pulling Unit***		$35.32	$38.85	hour	Equipment Watch
*Includes additional 10% Profit & Overhead per WDEQ/LQD Guidline No. 12, Section 12(b)					
**Equipment Watch Rental Rate Blue Book: Volume 1 (1st Half 2013)					
***1 3/4 Ton 4x4 Truck with Hoist					
Quoted Costs		**Rate ($)**	**Profit & Overhead**	**Units**	**Source**
Deep Disposal Well - Plug & Abandonment Costs		$13.62	included	foot	UIC Permit-2012
DDW MIT		$31,625	included	well	Quote-2013
Well Replacements (Restoration)		$14,763	included	well	Actual Costs-2013
Bellhole Refurbishment		$5,530	included	bellhole	Contract-2012
Header House Refurbishment (Typical Wellfield)		$10,000	included	header house	Actual Costs-2013
WDEQ/LQD Guideline No. 12 Costs	**Appendix**	**Rate ($)**	**Profit & Overhead***	**Units**	**Source**
Moving Materials: One-Way Distance 500 feet, 0% grade	Appendix C	$1.099	$1.209	bcy	Guideline-10/2013
Moving Materials: One-Way Distance 1,000 feet, 0% grade	Appendix C	$1.313	$1.444	bcy	Guideline-10/2013
Moving Materials: One-Way Distance 2,000 feet, 0% grade	Appendix C	$1.701	$1.871	bcy	Guideline-10/2013
Moving Materials: One-Way Distance 150 feet, 0% grade	Appendix E	$0.351	$0.386	lcy	Guideline-10/2013
Grading Operating Costs	Appendix G	$77.31	$85.04	acre	Guideline-10/2013
Fencing Removal	Appendix H	$0.39	$0.43	foot	Guideline-10/2013
Ripping Operating Costs (Asphalt)	Appendix I	$881.17	$969.29	acre	Guideline-10/2013
Ripping Operating Costs (Overburden)	Appendix II	$1,255.70	$1,381.27	acre	Guideline-10/2013
Building Demolition - Mixture of Types	Appendix K	$0.287	$0.316	ft3	Guideline-10/2013
Building Demo Disposal (Average)	Appendix K	$9.62	$10.58	cy	Guideline-10/2013

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Concrete (Floor) Demolition - 6" Thick with Rebar	Appendix K	$5.48	$6.03	ft2	Guideline-10/2013	
Concrete (Footing) Demolition - 2' Thick, 3' Wide	Appendix K	$20.21	$22.23	linear foot	Guideline-10/2013	
Concrete Disposal On-Site	Appendix K	$8.29	$9.12	cy	Guideline-10/2013	
Drill Hole Abandonment: Wet Exploration Holes >25 holes	Appendix L	$3.00	$3.30	foot	Guideline-10/2013	
Well Abandonment: Monitor, Production, and Injection Wells	Appendix L	$2.50	$2.75	foot	Guideline-10/2013	
Incidental Costs: Small Site Grading and Seeding (<1000 sq. feet)	Appendix L	$50	$55	site	Guideline-10/2013	
Incidental Costs: Capping	Appendix L	$10	$11	each	Guideline-10/2013	
Incidental Costs: Site Location	Appendix L	$10	$11	site	Guideline-10/2013	
Incidental Costs: Remove Pump, Wiring, and Drop Pipe	Appendix L	$0.40	$0.44	foot	Guideline-10/2013	
Incidental Costs: Remove and Dispose Casing (top few feet)	Appendix L	$30	$33.00	well	Guideline-10/2013	
Incidental Costs: Monitoring Well Concrete Pedestal Disposal	Appendix L	$100	$110.00	each	Guideline-10/2013	
Scarification Costs	Appendix P	$70.91	$78.00	acre	Guideline-10/2013	
Revegetation Costs-Seed	Appendix Q	$106	$116.60	acre	Actual Costs-2013	
Revegetation Costs-Mulch	Appendix Q	$91.88	$101.07	acre	Actual Costs-2013	
Revegetation Costs-Fertilizer	Appendix Q	$300.00	$330.00	acre	Actual Costs-2013	
Revegetation Costs-Total	Appendix Q	$497.88	$547.67	acre	Actual Costs-2013	
*Includes additional 10% Profit & Overhead per WDEQ/LQD Guidline No. 12, Section 12(b)						
Construction & Demolition Debris Transportation & Disposal Costs						
Building Volume for Disposal	0.33					
Void Factor (for disposal)	1.1					
	Disposal ($/ton)	**C&D (cy/ton)**	**Tranport ($/load)**	**C&D (cy/load)**	**Total ($/cy)**	**Total ($/ft3)**
C&D Debris (county landfill)	$62.00	2	$335.00	30	$42.17	$1.56
*Transportation and disposal costs based on actual costs (2013). Transportation and disposal costs include profit and overhead of service provider. Conversion factors of 2 cy/ton and 0.33 to account for air space in buildings based on FEMA - Debris Estimating Field Guide, FEMA 320, September 2010.						
11e.(2) Byproduct Material Transportation & Disposal						
Load Correction Factor: Soil, sand, etc.	1.1					
Load Correction Factor: Process materials, etc.	0.42					
White Mesa	**Disposal ($/ton)**	**Disposal ($/cy)**	**Volume (cy)**	**Tranport ($/cy)**	**Total ($/cy)**	**Total ($/ft3)**
Type I: Soil, sand, gravel, rock, concrete rubble,etc.	$138.97	$152.87	13.0	$247.95	$400.82	$14.85
Type II: Process material, pumps, motors, etc.	$160.08	$67.23	24.7	$130.50	$197.73	$7.32
Type II: Chipped piping	$160.08	$67.23	36.4	$88.55	$155.78	$5.77
Pathfinder						
Type I: Soil, sand, rock, gravel, demolition masonry, concrete rubble	N/A	$130.00	13.0	$26.73	$156.73	$5.80
Type II: Other process waste, process equipment, etc.	N/A	$378.00	24.7	$14.07	$392.07	$14.52
Type II: Chipped piping	N/A	$378.00	36.4	$9.55	$387.55	$14.35
*Transportation and disposal costs based on contract amounts as adjusted annually. Transportation and disposal costs include profit and overhead of service provider and include all unloading and decontamination fees, waste tax, fuel surcharges, etc. Tranportation costs assume 1) one truck transports one 13-cy bin of Type I waste, 2) one truck transports one 24.7-cy bin of Type II process waste (including pumps, motors, etc.) and 3) one truck tranports one 36.4-cy bin of Type II chipped piping waste.						

Cameco Resources
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GROUNDWATER RESTORATION UNIT COSTS		
Wellfield Pumping		
Equipment		
Wellfield Pump Sizes	5	hp
Wellfield Pump Flow Rate	25	gpm
kW to HP Conversion Factor	0.746	
Cost of Electricity	$0.0648	kWhr
Efficiency	80%	
Wellfield Pumping Cost	**$0.20**	**per kgal**
Satellite Pumping		
Equipment		
Satellite Pump Sizes	60	hp
Satellite Pump Flow Rate	75	gpm
kW to HP Conversion Factor	0.746	
Cost of Electricity	$0.0648	kWhr
Efficiency	90%	
Satellite Pumping Cost	**$0.72**	**per kgal**
Deep Disposal Well Injection		
Equipment		
Deep Disposal Well Pump Size	75	hp
Deep Disposal Well Flow Rate	75	gpm
kW to HP Conversion Factor	0.746	
Cost of Electricity	$0.0648	kWhr
Efficiency	90%	
Reagent		
Antiscalant Cost (Scaletrol)	$4.5177	per lb
Density of Water	8.34	lbs/gal
Specific Gravity (Scaletrol)	1.284	
Antiscalant Cost (Scaletrol)	$48.38	per gal
Antiscalant Dose (ScaleTrol)	0.0000048	gal/gal
Deep Disposal Well Cost	**$1.13**	**per kgal**
PSR2 & Irrigator		
Equipment		
Feed Water Pump	40	hp
Irrigator Pump	50	hp
Sampler	0.5	kW
Irrigator Flow Rate	200	gpm
kW to HP Conversion Factor	0.746	
Cost of Electricity	$0.0648	kWhr
Efficiency	90%	
PSR 2 & Irrigator Cost	**$0.41**	**per kgal**
Total Groundwater Sweep Costs	**$1.32**	**per kgal**
Reverse Osmosis		
Equipment		
System Capacity	250	gpm
Unit Pump	60	hp
Injection Pump	60	hp
Waste Pump	15	hp
kW to HP Conversion Factor	0.746	
Cost of Electricity	$0.0648	kWhr
Efficiency	90%	
Reagents		
Tripolyphosphate Usage Rate	0.00000130	lb/gal
Tripolyphosphate Cost	$1.0893	per lb
EDTA Usage Rate	0.00000315	lb/gal
EDTA Cost	$1.8774	per lb
Antiscalant Cost (Hypersperse)	$3.9050	per lb
Density of Water	8.34	lbs/gal
Specific Gravity (Hypersperse)	1.124	
Antiscalant Cost (Hypersperse)	$36.6061	per gal

Antiscalant Dose (Hypersperse)	0.0000036	gal/gal
Sodium Sulfide Usage Rate	0.00017	lb/gal
Sodium Sulfide Cost	$0.5520	per lb
RO Cost (without Reductant)	**$0.62**	**per kgal**
RO Cost (with Reductant)	**$0.71**	**per kgal**
MIT Costs for Production Wells		
Equipment		
Pulling Unit Hours	4	hrs/day
Pulling Unit Cost	$38.85	$/hour
MIT Unit Hours	8	hrs/day
MIT Unit Cost	$33.10	$/hour
Labor		
Required Hours	8	hrs/day
Required Laborers	1.5	per day
Labor Cost	$32.20	$/hour
Productivity	4	wells/day
MIT Cost for Production Wells	**$201.65**	**per well**
MIT Costs for Injection Wells		
Equipment		
Pulling Unit Hours	0	hrs/day
Pulling Unit Cost	$38.85	$/hour
MIT Unit Hours	8	hrs/day
MIT Unit Cost	$33.10	$/hour
Labor		
Required Hours	8	hrs/day
Required Laborers	1	per day
Labor Cost	$32.20	$/hour
Productivity	4	wells/day
MIT Cost for Injection Wells	**$130.60**	**per well**
Selenium Plant Operating Costs		
Plant Operation		
Selenium Plant Media Change	4	times/year
Number of Columns in Plant	2	columns
Reagents		
Barium Chloride	90,000	lb/year
BaCl Cost	$0.7970	$/lb
Materials		
Iron	12,000	lb/column
Iron Cost	$0.5516	$/lb
Sand	18,000	lb/column
Sand Cost	$0.14	$/lb
Gravel	20,000	lb/column
Gravel Cost	$0.0190	$/lb
Disposal		
ByProduct for Disposal	63	yd^3/year
Disposal Cost (incl. Transport)	$157	per yd^3
Selenium Plant Operating Cost	**$157,852.16**	**per year**
Booster Pump Operating Cost		
Equipment		
Wellfield Pump Sizes	40	hp
Number of Pumps Running (avg.)	2	per year
Hours Running	24	per day
kW to HP Conversion Factor	0.746	
Cost of Electricity	$0.0648	kWhr
Efficiency	90%	
Booster Pump Operating Costs	**$37,641.37**	**per year**
WELL ABANDONMENT UNIT COSTS		
Removal of Contaminated Soil Around Wells		
Equipment		
Cat 416 Backhoe Time	0.25	hours

Cat 416 Backhoe Cost	$38.47	per hour	
Labor			
Radiation Technician	0.25	hours	
Radiation Technician Cost	$35.00	per hour	
Operator	0.25	hours	
Operator Cost	$36.40	per hour	
Disposal			
ByProduct Disposal	0.37	cubic yard	
Disposal Cost (incl. Transport)	$156.73	per cubic yard	
Removal of Contaminated Soil Cost	**$85.46**	**per well**	
DDW Pump Dismantling and Disposal			
Labor			
Number of Laborers	2	per day	
Number of Pumps Dismantled	0.5	per day	
Hours Per Day	8	hours	
Laborers Cost	$32.20		
Disposal			
Volume of DDW Pump	240	ft^3	
ByProduct Disposal	$7.32	per ft^3	
DDW Pump Dismanteling and Disposal	**$2,788.03**	**per pump**	
WELLFIELD RECLAMATION COSTS			
Wellfield Piping Removal			
Equipment			
Trackhoe	1	per day	
Trackhoe Cost	$110.03	per hour	
Loader	1	per day	
Loader Cost	$58.22	per hour	
Pickup Truck	1	per day	
Pickup Cost	$22.14	per hour	
Chipper Cost	$52.72	per hour	
Labor			
Backhoe Operator	$36.40	per hour	
Loader Operator	$36.40	per hour	
Laborer	$32.20	per hour	
Hours Per Day	8	per day	
Productivity	1500	ft/day	
Piping Removal Cost	**$1.86**	**per foot of pipe**	
Piping Reduction			
2" Pipe	0.0107		
3" Pipe	0.0233		
4" Pipe	0.0385		
6" Pipe	0.0834		
8" Pipe	0.1413		
10" Pipe	0.2196		
12" Pipe	0.3088		
14" Pipe	0.3723		
16" Pipe	0.4864		
Production Pump Volume			
Length	66	inches	
Diameter	3.8	inches	
Cubic Inch to Cubic Foot Conversion	0.0006		
Production Pump Volume	**0.43**	**cubic feet**	
Trunk Line Removal			
Equipment			
Trackhoe	1	per day	
Trackhoe Cost	$110.03	per hour	
Loader	1	per day	
Loader Cost	$58.22	per hour	
Pickup Truck	1	per day	
Pickup Cost	$22.14	per hour	
Chipper Cost	$52.72	per hour	
Labor			
Trackhoe Operator	$36.40	per hour	

Loader Operator	$36.40	per hour	
Laborer	$32.20	per hour	
Hours Per Day	8	per day	
Productivity	750	ft/day	
Buried Piping Removal Cost	**$3.71**	**per foot of pipe**	
Removal of Well Head Covers			
Volume of Well Head Cover (ft^3)	1.86	cubic feet	
Demolition Cost	$0.316	per cubic ft	
Decontamination			
Acid Usage	4.1	pounds per wellhead cover	
Acid Cost	$0.1992	per lbs	
Labor			
Radiation Tech	$35.00	per hour	
Operator	$36.40	per hour	
Productivity	10	wellheads per hour	
Disposal			
Void space	10%		
Transportation and Disposal Cost	$1.56	per ft3	
Removal of Well Head Cover Cost	**$11.74**	**per well**	
Header House Decontamination			
Decontamination			
Acid Usage	20	pounds per header house	
Acid Cost	$0.20	per pound	
Labor			
Radiation Tech	$35.00	per hour	
Number of Operators	2	per day	
Operator	$36.40	per hour	
Hours Per Day	8	per day	
Productivity	1	header house per day	
Header House Decontamination Cost	**$ 621.38**	**per header house**	
Header House Heating			
Heater Power Usage	7.5	kW	
Days Used	180	days per year	
Electricity Cost	$0.0648	kWhr	
Header House Heating Cost	**$1,050**	**per year**	
WELLFIELD AND SATELLITE AND SURFACE RECLAMATION			
Wellfield Road Reclamation			
Gravel Road Base			
Average Depth	0.25	feet	
Average Width	10	feet	
Material Moved (0% Grade)	$1.44	bcy	
Cubic Yard to Cubic Feet Conversion	0.04		
Scarification of Road			
Scarification Costs	$78	per acre	
Average Width	25	feet	
Acre to Sq. Foot Conversion	2.29568E-05		
Grading Cost	$85	per acre	
Topsoil Depth	0.67	feet	
Discing/Seeding Costs	$548	per acre	
Linear Feet for Unit Cost	1000	feet	
Wellfield Road Reclamation Cost	**$1,437.62**	**per 1000 feet**	
EQUIPMENT COSTS			
Tank Removal			
Equipment			
Loader	$58.22	per hour	
Trackhoe	$110.03	per hour	
Manlift	$52.29	per hour	
Pickup	$22.14	per hour	
Lift Truck	$62.08	per hour	

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Labor			
Number of Operators	4		
Operator Cost	$36.40	per hour	
Hours Per Day	8	per day	
Productivity	25	ft^3/day	
Tank Removal Cost	**$144**	**per ft^3**	
Pipe Removal			
Equipment			
Manlift	$52.29	per hour	
Pickup	$22.14	per hour	
Lift Truck	$62.08	per hour	
Chipper	$52.72	per hour	
Labor			
Number of Operators	4		
Operator Cost	$36.40	per hour	
Hours Per Day	8	per day	
Productivity	300	ft/day	
Pipe Removal Cost (Inside Buildings)	**$8.93**	**per ft**	
Pump Removal			
Equipment			
Truck	$22.14	per hour	
Skid Steer	$40.23	per hour	
Labor			
Number of Operators	2		
Operator Cost	$36.40	per hour	
Hours Per Day	8	per day	
Productivity	10	ft^3/day	
Pump Removal	**$108.14**	**per ft^3**	
Dryer Removal			
Equipment			
Truck	$22.14	per hour	
Lift Truck	$62.08	per hour	
Labor			
Number of Operators	4		
Operator Cost	$36.40	per hour	
Hours Per Day	8	per day	
Productivity	125	ft^3/day	
Dryer Removal Cost	**$14.71**	**per ft^3**	
RO and Degasser Removal			
Equipment			
Truck	$22.14	per hour	
Lift Truck	$62.08	per hour	
Labor			
Number of Operators	2		
Operator Cost	$36.40	per hour	
Hours Per Day	8	per day	
Productivity	250	ft^3/day	
RO and Degasser Removal Cost	**$5.02**	**per ft^3**	
BUILDING COSTS			
Acid Wash Walls			
Acid			
Acid Usage	0.05	per square foot	
Acid Cost	$0.20	per pound	
Equipment			
Manlift	$52.29	per hour	
Labor			
Laborer	2	people	
Laborer Cost	$32.20	per hour	

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Productivity	125	square feet per hour		
Acid Wash Walls Cost	**$0.94**	**per square foot**		
Acid Wash Floors				
Acid				
Acid Usage	0.05	per square foot		
Acid Cost	$0.20	per pound		
Labor				
Laborer	2	people		
Laborer Cost	$32.20	per hour		
Productivity	125	square feet per hour		
Acid Wash Floors Cost	**$0.53**	**per square foot**		
Eletrical Power				
*Pumping Costs for Operating DDWs, RO, and Wellfield are included in GW Rest Costs				
Satellite 2				
Miscellaneous Pumps, Fans, Sumps, etc.	22.5	HP		
Lighting	35.0625	kW (per square ft)		
kW to HP Conversion Factor	0.746			
Electricity Cost	$0.0648	per kWhr		
Efficiency Factor	90%			
Operating Hours Per Year	8760	hours		
Satellite 2 Power Cost	**$28,478**	**per year**		
Satellite 3				
Miscellaneous Pumps, Fans, Sumps, etc.	22.5	HP		
Lighting	35.0625	kW (per square ft)		
kW to HP Conversion Factor	0.746			
Electricity Cost	$0.0648	per kWhr		
Efficiency Factor	90%			
Operating Hours Per Year	8760	hours		
Satellite 3 Power Cost	**$28,478**	**per year**		
Se Plant				
Miscellaneous Pumps, Fans, Sumps, etc.	72.5	HP		
Lighting	23.3	kW		
kW to HP Conversion Factor	0.746	kW (per square ft)		
Electricity Cost	$0.0648	per kWhr		
Efficiency Factor	90%			
Operating Hours Per Year	8760	hours		
Selenium Power Cost	**$40,857**	**per year**		
DDW - Typical				
Miscellaneous Pumps, Fans, Sumps, etc.	2	HP		
Lighting	0.49	kW		
Heating	12.5	kW	assume operation only 6 mos/yr	
kW to HP Conversion Factor	0.746	kW/hp		
Electricity Cost	$0.0648	per kWhr		
Efficiency Factor	90%			
Operating Hours Per Year	8760	hours		
DDW Electrical Cost	**$4,588**	**per year**		
MISCELLANEOUS RECLAMATION AND RESTORATION COSTS				
Liner and Subsoil Removal Costs				
Equipment				
Trackhoe Cost	$ 110.03	per hour		
Loader Cost	$ 58.22	per hour		
Labor				
Operator	36.40	per hour		
Productivity	40	cubic yards/hour		
Total Removal	**$ 5.12**	**per cubic yard**		